ENGINEERING NEWS-RECORD

JULY 30, 1959

PRICE 50 CENTS

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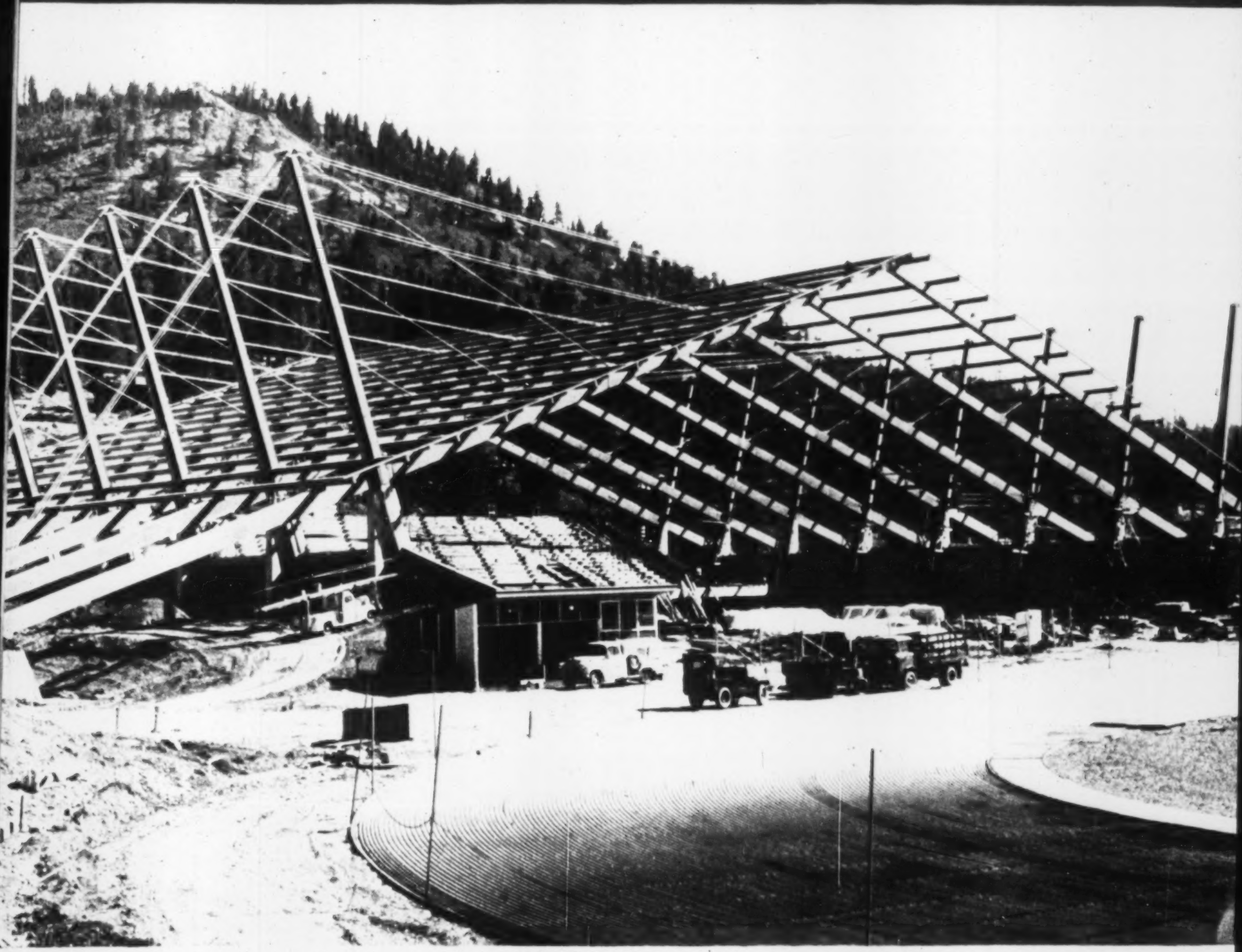

For the Olympics: Cable-hung roof spans 300 feet p.30

A McGRAW-HILL PUBLIC

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UNIVERSITY MICROFILMS IN
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LARGEST SEARS STORE in South

MAYFLOWER
HOTEL MAYFLOWER
HOTEL FLORIDAN
HOTEL

Architect's rendering of completed Sears building.

Architects: Weed, Johnson, Associates: Miam
General Contractor: Batson-Cook Co., West Point, Ga
Jacksonville, Fla.
Piling Contractor: Duval Engineering & Contractin
Jacksonville, Fla.

Supported by Armco Pile Shells

New retail store of Sears, Roebuck & Co., now being constructed in Jacksonville, Florida, will be their largest in the South, having 132,000 square feet of actual sales area.

To support this building, more than 900 Armco HEL-COR® Pile Shells were mandrel-driven to specified loadings. These shells, supplied in 16 and 18 gage in 12¼-inch diameters, were driven to depths ranging from 16 to 40 feet. The foundation required 20,000 feet of pile shells.

The foundation contractor averaged 44 piles driven per 8-hour day for the entire job, using a mechanically-expanding mandrel with a driving force of 15,000 ft. lbs.

The attractive building, with an exterior of pink Roman brick, is scheduled for completion early next fall.

For more information on Armco Pile Shells, write us. Armco Drainage & Metal Products, Inc., 1999 Curtis Street, Middletown, Ohio. In Canada: Guelph, Ontario.

Looking down into mandrel-driven Hel-Cor Pile Shell at Sears site. Contractor makes visual inspection for alignment before pouring concrete.

ARMCO DRAINAGE & METAL PRODUCTS

Subsidiary of ARMCO STEEL CORPORATION

OTHER SUBSIDIARIES AND DIVISIONS: Armco Division • Sheffield Division • The National Supply Company
The Armco International Corporation • Union Wire Rope Corporation • Southwest Steel Products

now at your Allis-Chalmers dealer

The ONE FORTY FIVE— OUTSTANDING VALUE IN MEDIUM-POWER GRADERS

80 hp 21,540 lb

. . . with features you can't match for the money on any grader

The new Allis-Chalmers ONE FORTY FIVE motor grader is built to outwork and outproduce any grader near its size . . . at a price you can't afford to overlook. An exclusive combination does it: high capacity front axle and throat clearance, big-grader power train, ROLL-AWAY moldboard, plus benefits that help an operator to do more work.

The ONE FORTY FIVE power train is built for long grading service. Simple, dry-type ceramic-lined clutch; constant-mesh transmission; heavy-duty gear train — all much stronger than you usually find in a grader this size.

Big clearance under the front axle straddles huge windrows without drag. Watch the ROLL-AWAY moldboard lift and roll the load. Check the load-clearing height from cutting edge to circle. You'll get more grading production than any other medium-sized machine can give you.

Now check these operator advantages. Platform is clean and roomy. Suspended pedals provide matchless foot room. Full visibility all around takes the strain out of operating. Toggle-type control levers allow ample road feel without wrist-snapping backlash.

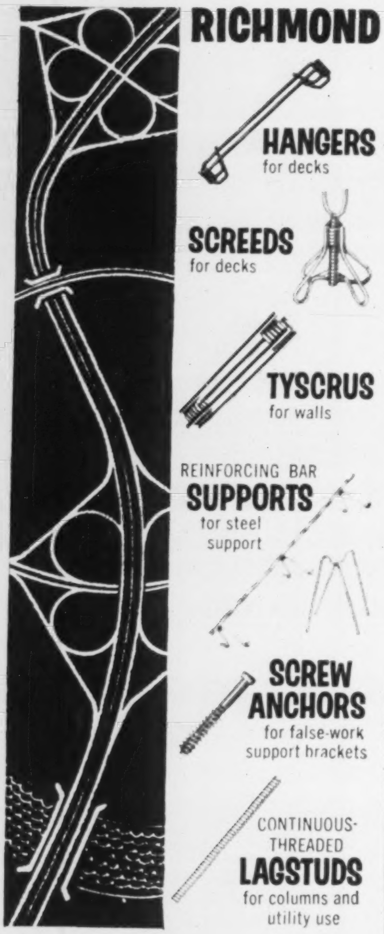
Your Allis-Chalmers dealer will show you an eye-opening demonstration of the ONE FORTY FIVE. Then keep its low cost — and high performance — in mind when you're ready to buy. Allis-Chalmers, Construction Machinery Division, Milwaukee 1, Wisconsin.

ROLL-AWAY is an Allis-Chalmers trademark.

ONE FORTY FIVE
80 hp 21,540 lb approx.

move ahead with **ALLIS-CHALMERS**

. . . power for a growing world



Most Thruway Contractors use Richmond Products

In the roadbuilding field, where time is money, concrete contractors rely on Richmond to save both. Richmond products are often a major factor in the profit and loss picture.

You buy 48 years' experience when you specify Richmond products. The current Handbook fully describes the entire Richmond line. Write for it, to:

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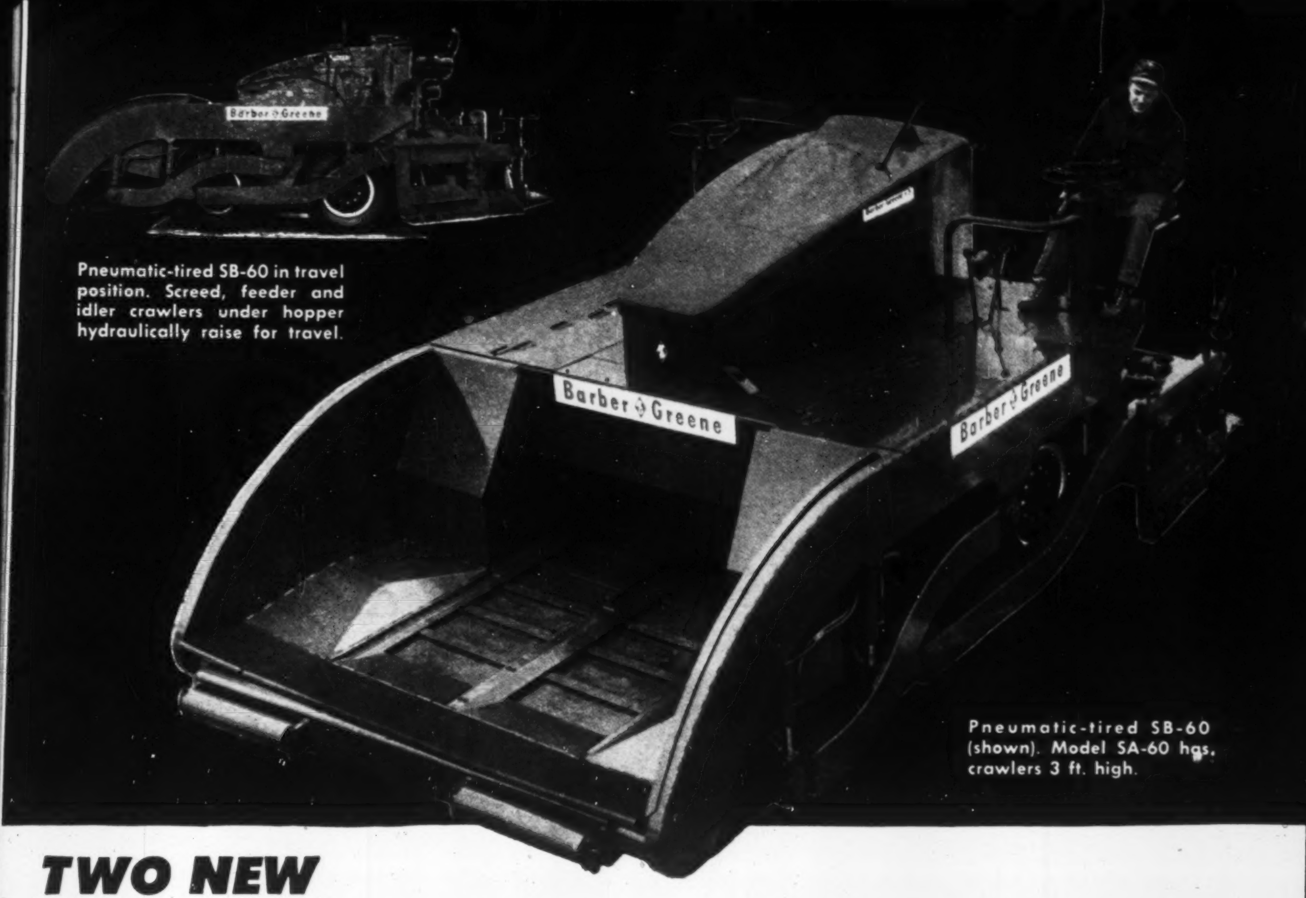


Pneumatic-tired SB-60 in travel position. Screed, feeder and idler crawlers under hopper hydraulically raise for travel.

Pneumatic-tired SB-60 (shown). Model SA-60 has crawlers 3 ft. high.

TWO NEW

heavy-duty . . . high-capacity . . . high-speed FINISHERS

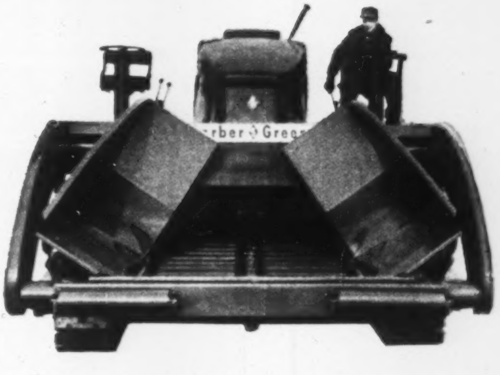
CRAWLERS or PNEUMATICS

Model SA-60 Model SB-60

Designed throughout for heavy-duty, high-capacity, low-maintenance operation, these two new Barber-Greenes offer the ultimate in high-tonnage production. They reduce nonproductive time, lay more miles per day at less cost per ton.

New design concepts give unequaled speed and maneuverability . . . 100% power steering (no clutches—no steering axle) . . . faster truck contact, discharge and release . . . feeder and screw speeds independent of travel speed . . . new automatic feed control . . . articulated, stabilized suspension . . . new unitized-construction . . . improved automatic leveling . . . hydraulically operated, high-speed tamper.

FOUR DIFFERENT FINISHERS. Only Barber-Greene offers a line of four finishers: the new 873, which paves on crawlers and travels on rubber; the new heavy-duty SA-60 and SB-60, shown above; and the famous 879-B unmatched for all types and sizes of jobs.



Self-cleaning, hydraulically operated hopper extends to extreme rear of chassis where gates are located.

These are just the high spots. Ask for complete information.

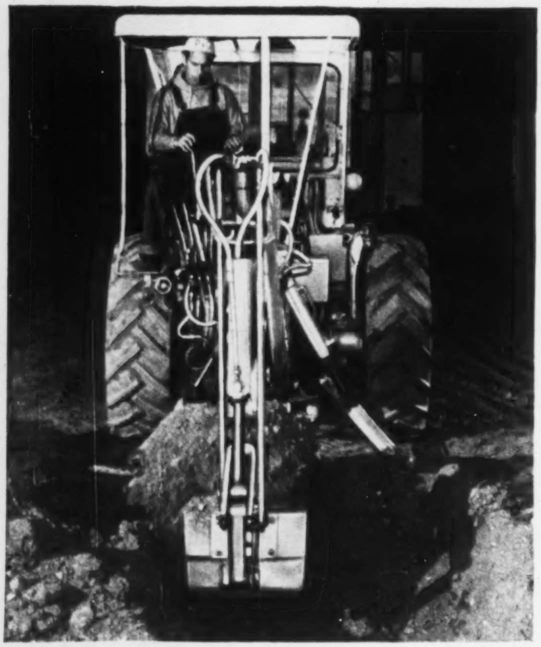
59-1-F

Barber-Greene BG

AURORA, ILLINOIS, U.S.A.

CONVEYORS . . . LOADERS . . . DITCHERS . . . ASPHALT PAVING EQUIPMENT

Moline power, ruggedness, speed service line trenching



Moline direct-drive pump boosts backhoe capacity — The Moline 445 Wheeler powers this backhoe through a rear-mounted hydraulic pump, direct-driven from the crankshaft. Direct-drive steps up efficiency, eliminates unnecessary drive gearing, improves fuel economy. Side-mounted pumps are also available.

Milwaukee contractor cites fast response, low maintenance on Moline 445 Industrial Wheeler

"We've operated our Minneapolis-Moline 445 Wheeler on trenching jobs for the past 12 months," says Paul J. Grunau of the Grunau Company, Milwaukee, Wisconsin. "We like the fast power response and all-around ruggedness of our Wheeler. Down time and maintenance cost has been *practically nil*."

Grunau's Wheeler is equipped with a Moline backhoe and ¾ yard loader. Trenching operations have taken the unit over soft and rough grade, inside and out of buildings, excavating and backfilling for sewer and water lines, as well as loading and boom work.

Moline Industrial Wheelers offer many profit-making advantages on rugged, year-round construction service. Husky, Moline-built high-turbulence diesel or gasoline engines, optional shuttle reverse or Ampli-Torc 12-speed drive, direct-drive hydraulic pumps—and built-in hydraulic steering speed work cycles . . . cut job costs.

Heavy-duty Moline Industrial Wheelers are available in 4 sizes, with diesel or gasoline engines, complete with Moline loader-backhoe attachments.

Check with your Minneapolis-Moline Dealer for facts on the newest in work-tested construction equipment.

MINNEAPOLIS MOLINE

B.F.Goodrich

B.F.Goodrich tires help contractor speed rugged construction of Glen Canyon Dam

MIGHTY Glen Canyon Dam—world's third highest—will tower 700 feet above the bedrock of the Colorado River in northcentral Arizona. Before this massive project can be completed, millions of tons of rock, sandstone, aggregate and other materials must be moved over rocky haul roads.

To help keep this rugged job on schedule, Merritt-Chapman & Scott Corporation, general contractor, relies on B.F.Goodrich tires and service—uses 47 different types and sizes of tires on 23 different types of equipment that work 'round the clock. For example, M-C&S uses B.F.Goodrich Rock Service tires on belly dump trucks (above).

B.F.Goodrich builds the Rock Service for just this kind of work. Husky double-chevron cleats pull in forward or reverse, defy rock cuts and bruises. B.F.Goodrich FLEX-RITE NYLON cords withstand double the impact of ordinary cord materials, resist heat blowouts and flex breaks. Result: This B.F.Goodrich cord body outwears even the extra-thick tread, can be retreaded over and over.

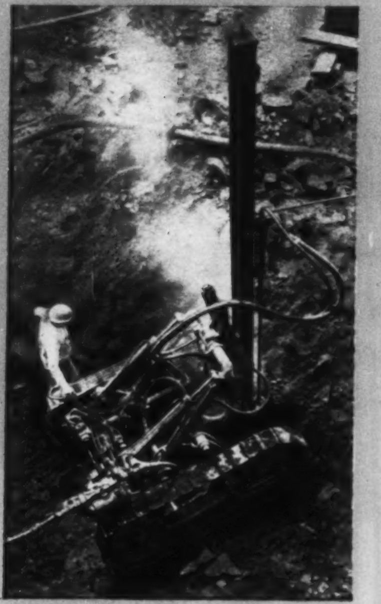
Other B.F.Goodrich products at work at Glen Canyon include conveyor belting, air hose and fire hose. Special maintenance and service for tires and industrial products are also in operation—all part of the new B.F.Goodrich Unified Contractor Program. No matter what your off-the-road job, B.F.Goodrich is ready to serve you—and help you save. Your Smileage dealer is listed under Tires in the Yellow Pages of your phone book. *The B.F.Goodrich Co., Akron 18, Ohio.*

Specify B.F.Goodrich Tubeless or tube-type tires when ordering new equipment

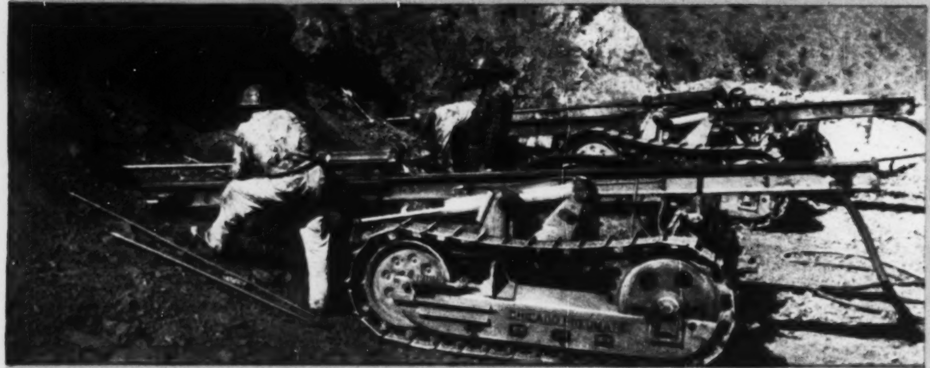
B.F.Goodrich
Smileage!

B.F.Goodrich ***off-the-road tires***

Ask a hard rock driller what he likes about a TRACDRIL *—He'll answer:* OPERATING EASE *and* SAFETY!



DRILLERS LIKE automatic brake on CP Tracdril that grabs and holds instantly when controls are released. Standing or drilling, the rig holds firm.



DRILLERS LIKE the way 6" channel constructed drill carriage provides rigid, steady mounting . . . eliminates distortion, resists crowding and prevents sag during horizontal operations. Feed always even. If steel breaks, drill will not plunge.

Here's "designed-in" safety. Release tramming motor throttle on CP Tracdril and multiple disc brake slams on instantly, automatically. No possibility of moving when rig is standing or drilling.

Dual control panels keep all hydraulic positioning levers within easy reach—drilling or tramming. U-Arm mounting lets operator convert fast from "hard high horizontals" to "snake holes". Two 6 HP "Power Vane" reversible motors give top tractive effort. Hard hitting CP-450DR Deep Hole Drill uses coupled drill steel, sinks 3-inch holes to 75 feet. Get complete information on Tracdrils from your CP equipment distributor, or write to *Chicago Pneumatic Tool Company, 8 East 44th Street, New York 17, N. Y.*

DRILLERS LIKE easy hole-spotting of CP Tracdril and the "deadman controls" insure operator safety. Drill moves ahead, backs, turns, pivots at a touch. Easily hauls 600 c.f.m. compressor up 10% grade.

Chicago Pneumatic

AIR COMPRESSORS • PNEUMATIC TOOLS • ROCK DRILLS • DIESEL ENGINES • ELECTRIC TOOLS • BLAST HOLE DRILLS • PUMPS • AIR-BLAST BITS

Reader Comment

Contractors Should Inspect

SIR—I was deeply concerned with your editorial "Inspection Can Avert Failures" (June 18, p. 312). You imply that most structural consultants are not interested in competent inspection.

This is a flagrant distortion of the truth. Such an ambiguous expression of opinion on your part can only serve to enhance the position of contractors' lobbying groups, local and national, who would like nothing better than legislation to further whittle away at the remnants of legal responsibility of the contractor and place a more intolerable burden on the professional engineer.

I shall maintain enough faith in the intelligence of most engineers and many contractors who will prevent any legislation that places full responbility for compliance on the designer, but who will meet the problem you discuss by working for legislation that will give the engineer the power he needs to enforce compliance.

You seem to feel the need of putting full-time field engineers on the staff of the structural consultant instead of the staff of the general contractor, where they should be.

Such a major displacement of inspection personnel and responsibilities introduces many questions left unanswered by your editorial:

1. Will the contractors, general and sub, be relieved of their former responsibility to "build the structure in compliance with the plans and specifications?" Where would the line be drawn? What would prevent an unscrupulous individual from underbidding all established contractors, realizing that he could use such inspection laws as a bludgeon on the consulting engineer to have him perform full-time structural supervision?
2. Who is to educate the consultant's clients that the reason for a marked increase in his fees (particularly on unusual types of construction, such as barrel-shell, lift-slab, etc.) would be due to a virtual shift in personnel and responsibilities, and should be offset by an equivalent reduction in the bids by the general contractors?
3. With relatively fewer young men entering the structural field each year, where will the designer get the men to be full-time inspectors?
4. Does your editorial really mean to imply that all inspection would no longer be performed at the job site to protect the interests of the owner (and the general public) but would be essentially to protect the contractor?

Yes, by all means, let us have better inspection, and by legislation, if necessary. But to protect all parties from the inadequate, inexperienced, irresponsible and unscrupulous of any segment of the whole construction operation, not to place the former responsibilities of all parties on one man.

R. D. McCONNELL
Urbana, Ill.

[**Editor's Note:** 1. The duty of an inspector is to represent the owner, to insure that construction is being carried out in accordance with plans and specifications. 2. It is now standard practice for engineers to increase their fee when they are engaged for inspection as well as design. Architects do the same. No new "education" of clients is needed. 3. The assumption of a shortage of structural engineers may not be warranted by the facts. 4. We believe the interests of the owner will be served best when he engages a structural engineer not only for structural design but also to check field work, to insure that construction is carried out in accordance with structural plans and specifications. The proposed legislation mentioned in the editorial would require owners to engage their engineers for both design and inspection.]

Prestressing Curves

SIR—In your article on Disneyland (ENR May 7, p. 34), you remark that the curvature of the girders ruled out consideration of prestressing. I am afraid this statement might mislead your readers into believing that curved members could not be prestressed.

Engineers who understand prestressing know that curvature is no objection. For example, the thin shells for the roofs of the Caracas race track have radii between 25 and 80 ft and are all prestressed along the curve. This was mentioned in one of your previous issues (ENR Apr. 24, 1958, p. 66).

It is often difficult to pretension curved members, but there is certainly no objection to post-tensioning. In fact, the torsional strength of the Disneyland girders could be considerably increased if they were prestressed.

T. Y. LIN
Professor of Civil Engineering
University of California
Berkeley, Calif.

(Reader Comment continued p. 10)

Engineering News-Record welcomes expression of opinions from its readers. Comment should be as brief as possible and pertinent to subjects of current construction importance. Letters should be addressed Editor, Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.

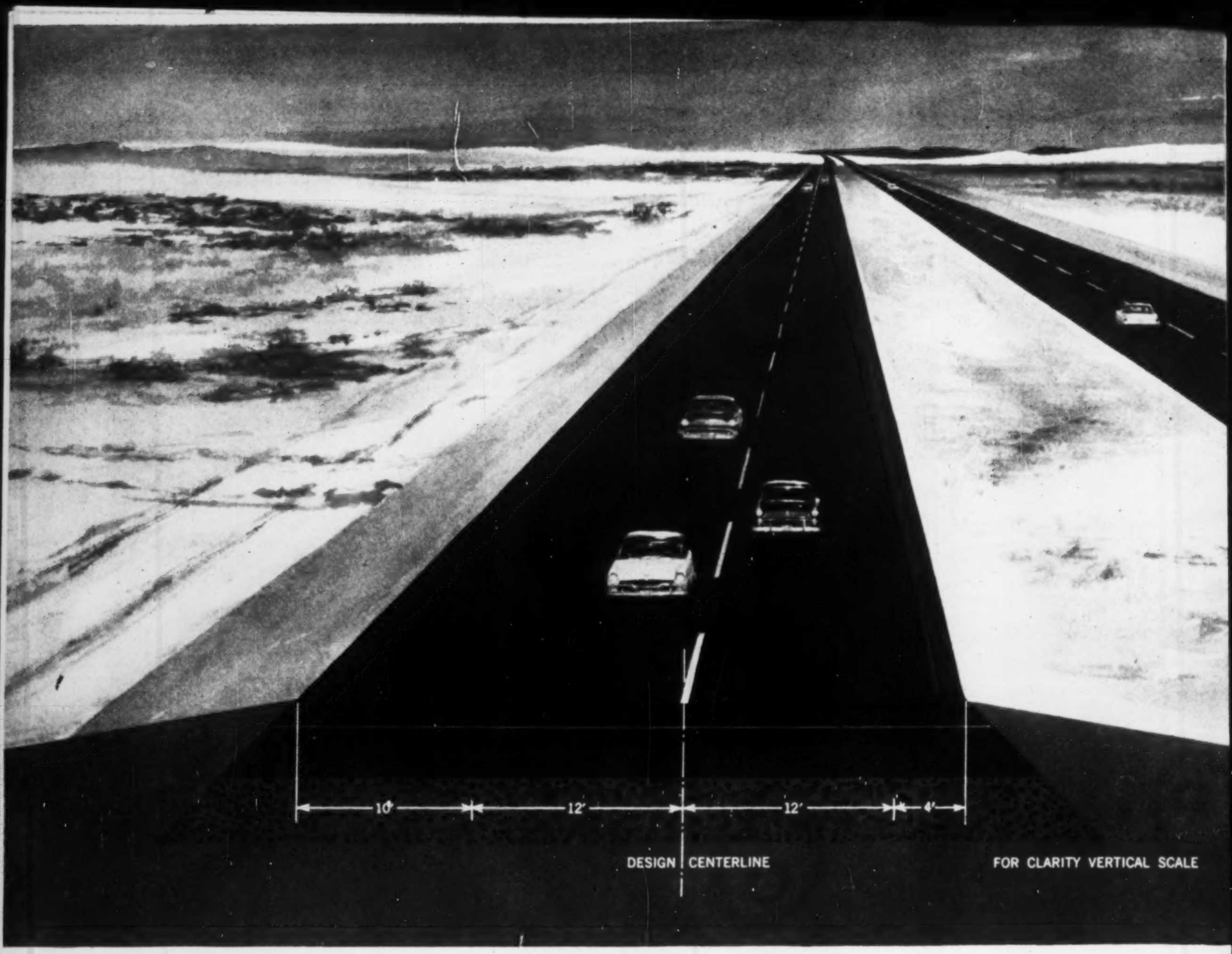
Going In The
HOLE?
(Physically Not Financially)

You can do this economically with a
HAWKEYE
portable elevator

Whether you are in the hole or up in the air with your job, the Hawkeye Elevator eliminates "ladder time" economically. Completely portable the Hawkeye Elevator may be dismantled and re-erected in a new location, in a few hours. Entire operation can be made by your maintenance crew.

Valuable sales territories still available, for further information write to

HAWKEYE PRODUCTS CORP.
Dey Building
Iowa City, Iowa



Arizona's First Interstate

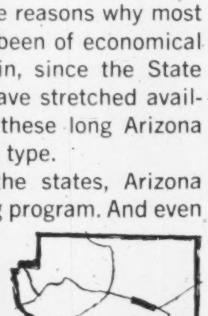
Experience with veteran 2-lane Asphalt

Arizona is a big state with a low population density—which means it needs plenty of roads. But there aren't millions of Arizonans to pay for them. Every dollar counts.

These are some of the reasons why most of Arizona's roads traditionally have been of economical Asphalt construction. Time and again, since the State began to pave, Asphalt pavements have stretched available funds over more and more of these long Arizona miles than could any other pavement type.

Now, along with the rest of the states, Arizona has launched a vast new road-building program. And even though more federal aid is available than ever before, these roads, too, are turning out to be Asphalt-paved. You don't have to look far for the reasons.

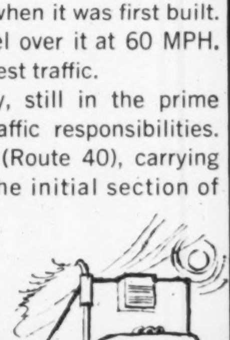
Arizona's veteran Asphalt-paved highways have proved themselves as rugged and durable as they were economical to build and maintain.

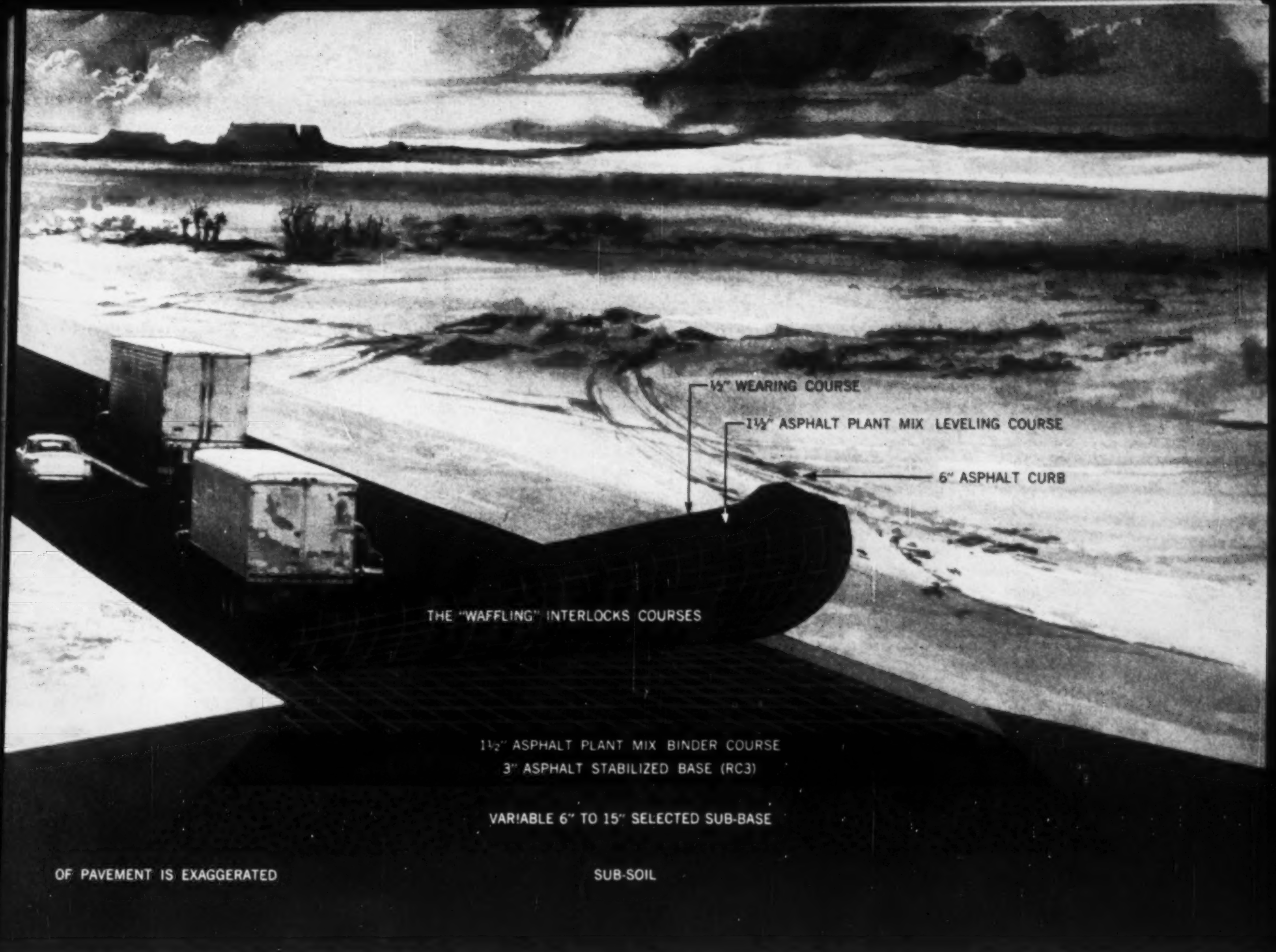


U.S. Route 66 between Winslow and Holbrook is an example. First paved more than 25 years ago (with Asphalt and sand!), this pavement is successfully supporting heavy traffic undreamed of when it was first built. "Double" trucks by the dozen barrel over it at 60 MPH. So does the bulk of Arizona's east-west traffic.

Now this veteran main artery, still in the prime of its life, is being given local traffic responsibilities. A new divided Interstate Highway (Route 40), carrying through traffic, will parallel it. The initial section of Arizona's new Interstate 40 is shown above. It is a 5.6 mile stretch between Winslow and Holbrook.

With no aggregate larger than ¾ inch available (and most under ¼ inch), only Asphalt construction could have been used to build this section of pavement up to Interstate standards. Total cost of the pavement structure was $1.75 per square yard!




½" WEARING COURSE
1½" ASPHALT PLANT MIX LEVELING COURSE
6" ASPHALT CURB
THE "WAFFLING" INTERLOCKS COURSES
1½" ASPHALT PLANT MIX BINDER COURSE
3" ASPHALT STABILIZED BASE (RC3)
VARIABLE 6" TO 15" SELECTED SUB-BASE
OF PAVEMENT IS EXAGGERATED
SUB-SOIL

Segment Asphalt-Paved!

pavements leads to decision

The cross section above shows you in detail how low-cost Asphalt materials were used to give this pavement lasting strength despite the scarcity of aggregate.

Notice, first, the use of Asphalt in the 3-inch base. This base, a sandy gravel, was road-mixed on the selected sub-base using RC-3 liquid asphalt.

Notice, second, (see right roadway above) that the 3-inch leveling course was asphalt plant-mix laid down in two courses. A novel between-course inter-lock was provided by "waffling" the lower course while still hot with a 4-inch square grid pattern, impressed about ⅜-inch into the surface. A tack coat was applied and a second course constructed. Then, a ½-inch wearing course was laid to insure a non-skid surface.

Notice, third, that both base and surface courses are uniform across the whole width of the road, shoulders as well as traffic lanes.

Notice, fourth, the use of Asphalt curb to provide controlled drainage, prevent embankment erosion and aid safety.

BEAT SCHEDULE BY TEN WEEKS

With today's equipment, modern heavy-duty Asphalt concrete pavement is being laid at record, reputation-building, tax-fund-conserving speeds. In this case, construction was completed 10 weeks ahead of schedule . . .. in plenty of time to accommodate the bulk of the summer tourist traffic.

Modern Asphalt concrete pavement can help **you** speed your highway modernizing program. It provides, as well, strength, durability and economy in full measure. Specify it for your Interstate Highways. Primary and farm-to-market roads, too.

Ribbons of velvet smoothness . . .
***ASPHALT**-paved Interstate Highways*

THE ASPHALT INSTITUTE
Asphalt Institute Building, College Park, Maryland

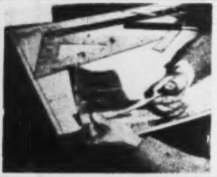
are you spending

$12.00

for a one cent job?

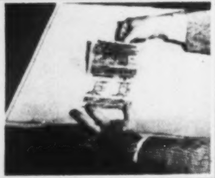
If you're duplicating drawing details, you're squandering precious hours of costly drafting time. STANPAT, the unique tri-acetate that is pre-printed with *your* standard and repetitive blueprint items, cuts time involved from *3 hours to 15 seconds!* Figured at current pay rates, this means a $12 job at less than one cent . . . the STANPAT way. Easily transferred to your tracings by an adhesive back or front, STANPAT relieves your engineer of time-consuming and tedious details, freeing him to concentrate on more creative work.

here's how simple the STANPAT method is!



PEEL
the STANPAT from its backing.

PLACE
the STANPAT into position on the tracing.



PRESS
into position . . . will not wrinkle or come off.

STANPAT is available in two types of adhesive backs:

- Rubber base for standard drafting and tracing papers
- Resin base to prevent leaching for papers that contain oils

But whatever the application may be, there's a STANPAT product for your specific needs. STANPAT has a guaranteed shelf life of one year from date appearing on tab end. For further information and technical assistance, complete the coupon below and mail.

STANPAT CO. Whitestone 57, N. Y., U. S. A.
Phone: FLushing 9-1693-1611

☐ Please quote on enclosed samples.
☐ Kindly send me STANPAT literature and samples.
DEPT. 116

Name________________
Title________________
Company________________
Address________________

Here are More 'Old Timers'

SIR—Our company was omitted from your list (ENR Apr. 30, p. 21), and we feel that, inasmuch as we are one of the oldest contractors and, also, one of the top contractors, we should advise you of our position in the construction field.

The McNeil Construction Co. was established in Los Angeles in 1866, and has been continuously in operation since.

In 1957, our volume of work in place was $21.1 million. In 1958, our volume of work in place was $13.1 million; and our volume of work to date, for 1959, is approximately $15 million. The major contracts completed by our firm within the last three years include the following:

Disneyland	$6,438,000.00
Yellowstone National Park	5,000,000.00
Ramo-Wooldridge Corp.	2,544,000.00
Lockheed Missile Systems Division	4,250,000.00
Convair (Astronautics) Division	20,000,000.00
Gibraltar Savings & Loan	1,000,000.00
Vons' Grocery Company	1,765,000.00
Loyola University	800,000.00
Bishop Montgomery High School	650,000.00
Jerseymaid Milk Products	500,000.00
IBM Corp.	5,000,000.00
Radio Corp. of America	4,500,000.00
Warner Ranch (Litton Industries)	1,500,000.00
Security-First National Bank	3,500,000.00
Pacific Fidelity Life Insurance Co.	1,700,000.00

BRUCE W. MCNEIL
President
McNeil Construction Corp.
Los Angeles, Calif.

▶ Our company was founded in San Francisco in 1909, and has been active continuously, and growing ever since. We are engineers and constructors serving the petroleum, chemical, ore-processing and power industries throughout the world.

We do an annual business averaging over $100 million. But due to the confidential nature of many of our projects, the reporting of new business usually cannot be released with the regularity of public and commercial contracts.

L. I. BLENNERHASSETT
C. F. Braun & Co., Engineers
Alhambra, Calif.

▶ We may not be the oldest or the biggest but believe we can qualify for your list of contractors over 40 years of age. This firm's birthday is Oct. 16, 1916, and we believe it safe to say that we have enjoyed a good reputation since.

EARL T. GRESHAM, JR.,
Executive Vice President
E. T. Gresham Co., Inc.,
Norfolk, Va.

▶ We were established in 1903 at Boston, moving to New York in 1909.

S. W. STEWART
President
Ambursen Construction Co.
New York, N. Y.

▶ This firm was founded in 1913 and, incidentally, has long since been reputed for quality building construction.

PETER C. TORNABENE
Tornabene Brothers Co.
Newton Upper Falls, Mass.

▶ We were established in the year 1908 and are now in the third generation of the same family group. Currently, Mr. Fred J. Auch is President of the AGC-Detroit Chapter.

While our volume of business ($2 million to $4 million annually) does not warrant classification in any "top list," we are proud of the many repeat customers among our clients, some going back as far as thirty and more years.

OTTO E. AUCH
Geo. W. Auch Co.
Detroit, Mich.

▶ We have been in business continuously under the same name since 1896, operating throughout the eastern half of the country with an annual volume of approximately $5 million.

The sons of the founder are active in the management of the company and the grandsons are now entering the business too.

GEORGE MICHELSON
Vice President
J. Slotnik Co.
Boston, Mass.

▶ Our company was organized in April 1907, by the late Charles S. Luck and for the past 30 years has been operated by his son, C. Merle Luck, and at the present time by his son, C. Merle Luck, Jr.

We specialize in heavy construction, such as streets, highways, airports and utilities.

C. MERLE LUCK, SR.
Luck Construction Co.
Richmond, Va.

▶ Our firm, originally founded by Mr. George W. Lathrop as an individual proprietorship, built its first building in the then very small town of Toledo around 1896. In 1928 it was incorporated under its present name and management.

We now do from $12 to $15 million annually of heavy and building construction so that we, too, are one of the unsung old timers of the industry.

W. W. LATHROP
President
Geo. W. Lathrop & Sons, Inc.
Toledo, Ohio

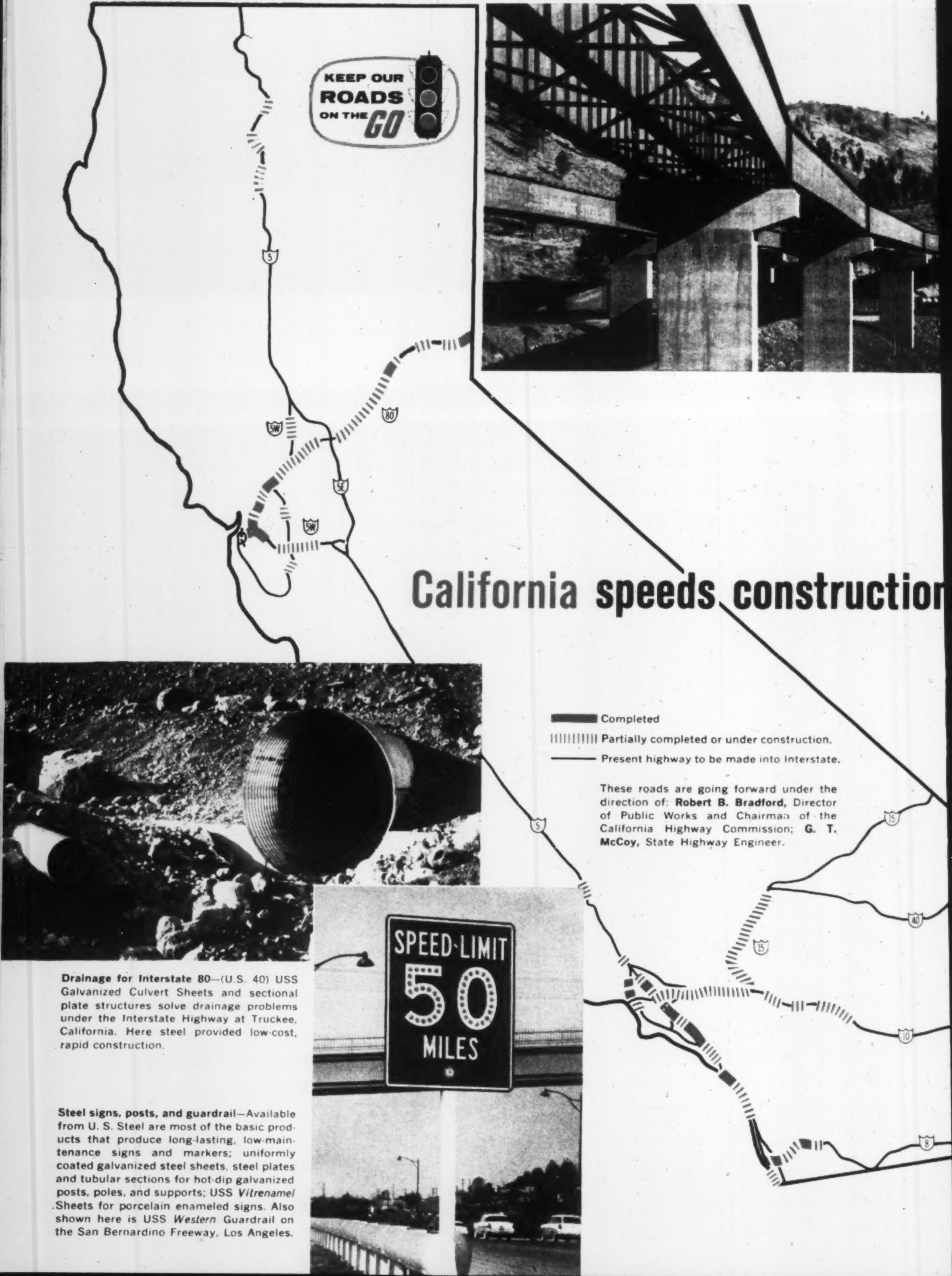
(Reader Comment continued p. 14)

2,194 miles of Interstate Roads underway in CALIFORNIA

SAN JOSE STEEL
SAN JOSE STEEL

KEEP OUR ROADS ON THE GO

USS United States Steel



California speeds constructio

▬ Completed

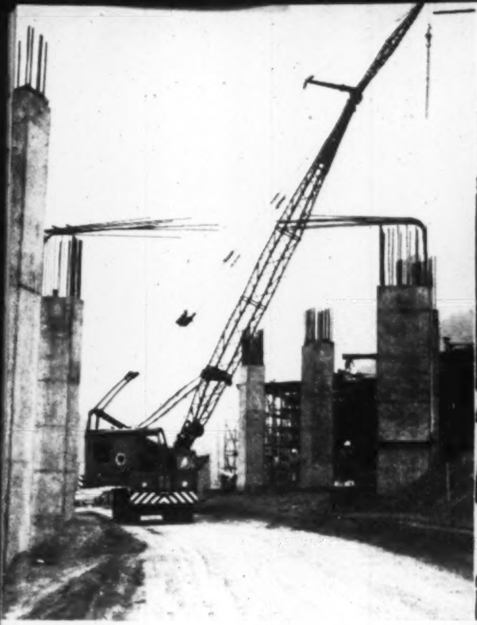
|||||||||| Partially completed or under construction.

— Present highway to be made into Interstate.

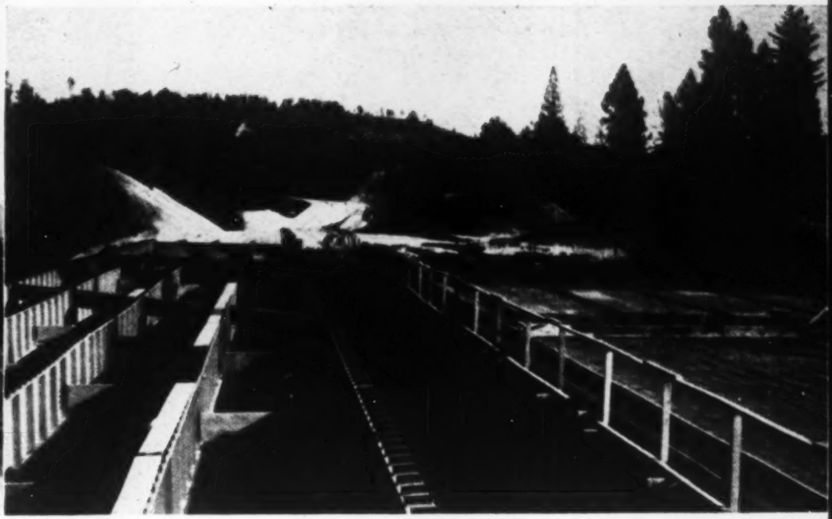
These roads are going forward under the direction of: **Robert B. Bradford,** Director of Public Works and Chairman of the California Highway Commission; **G. T. McCoy,** State Highway Engineer.

Drainage for Interstate 80—(U.S. 40) USS Galvanized Culvert Sheets and sectional plate structures solve drainage problems under the Interstate Highway at Truckee, California. Here steel provided low-cost, rapid construction.

Steel signs, posts, and guardrail—Available from U. S. Steel are most of the basic products that produce long-lasting, low-maintenance signs and markers; uniformly coated galvanized steel sheets, steel plates and tubular sections for hot-dip galvanized posts, poles, and supports; USS *Vitrenamel* Sheets for porcelain enameled signs. Also shown here is USS *Western* Guardrail on the San Bernardino Freeway, Los Angeles.



Overpass at Albany—Steel girders will be placed on top of these steel-reinforced concrete columns to form an overpass at Albany, California. USS *Di-Lok* Concrete Reinforcing Bars are used for all types of concrete work; and Universal Atlas Cement Division of United States Steel, offers a wide variety of portland cements. *Tiger Brand* Wire Rope is used in cranes, pavers, shovels, ditchers, trenchers, derricks, mixers and road scrapers.



Steel Bridges at Magra—The USS *Di-Lok* Bars in the right-hand side of these bridges at Magra near Gold Run, California, are ready for concrete. The next step in the construction of the left-hand bridge is to place the decking on top of the continuous girder span.

# of 2,194 miles of Interstate Highways

with products from United States Steel

CALIFORNIA'S HIGHWAY COMMISSION has planned 2,194 miles of Interstate Highways to be completed by 1975. 1,453 miles have already been located; 73 miles have been completed, and 170 miles are under construction. Several hundred miles of California's own Freeways are near to meeting the rigid requirements for the Interstate System; when they do, the number of *completed* miles will rise rapidly.

Steel is high on the list of products being used to speed construction on the eighteen highways in California's Interstate System: 3,186 bridges, overpasses, underpasses, and traffic-controlling clover-leafs will be built; 123 bridges are already completed and 194 are now under construction.

United States Steel supplies a complete line of products for highway construction: Structural carbon steel and special high-strength and constructional alloy steels for bridges; steel H-piles, sheet piling and tubular piles for bridge foundations; drainage products; reinforcing bars, welded wire fabric, cements, slag and other pavement construction products; wire rope, cable, tubing and special steels, and steel products for construction equipment; and a complete range of items including fence, beam and cable guardrail, steel for signs, markers, and other accessories. Write for the *free* 54-page booklet, "Keep Our Roads on the Go." This booklet lists all the products and services available from United States Steel to help you cut costs and speed operations in every phase of highway construction. United States Steel, 525 William Penn Place, Pittsburgh 30, Pa.

USS and trademarks in italics are registered by U. S. Steel

USS United States Steel

The highway market is served by the following divisions of United States Steel: American Bridge Division, Pittsburgh, Pa. • American Steel & Wire Division and Cyclone Fence Department, Cleveland, Ohio • Columbia-Geneva Steel Division, San Francisco, Calif. • Consolidated Western Steel Division, Los Angeles, Calif. National Tube Division, Pittsburgh, Pa. • Tennessee Coal & Iron Division, Fairfield, Alabama • Universal Atlas Cement Division, New York • United States Steel Supply Division, Steel Service Centers, Chicago, Illinois.

Quaker Thermoid THUNDERBIRD ...the toughest (yet most flexible) air hose you've ever used

Give Thermoid-Quaker THUNDERBIRD Wire-Braid Hose the works . . . the roughest kind of impact, twisting, crushing, inside pressures. It'll take everything you can deal out, and then some.

THUNDERBIRD takes this punishment while remaining the most flexible, non-kinking air hose you've set eyes upon. Accurately-controlled angle of wire braid assures this extreme flexibility. Tough neoprene tube resists hot or cold oil. Yellow neoprene cover provides maximum abrasion-resistance and high visibility even in the dark.

Sizes from 3/4" to 4" I.D. Working pressures to 400 psi air or 2,000 psi water. Lengths to 50 feet. Ask your Thermoid distributor about THUNDERBIRD, or write *Thermoid Division, H. K. Porter Company, Inc., Tacony & Comly Sts., Philadelphia 24, Pa.*

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▶ Mr. John F. Casey started in the general contracting business in 1898, which business is carried on today by this firm.

Charles Carroll Carter
John F. Casey Co.
Pittsburgh, Pa.

▶ We can not give you the exact date on which my great grandfather started the business, but we know for sure that it was at least 1890. My grandfather is still connected with the business—and he will be 85 years old this fall—followed by a son, and then his grandson.

There are many prominent buildings in Elkhart that have been built through the years by us.

I hope that you will add us to the list of the "Old Timers."

George C. Kistner
George C. Kistner & Son
Elkhart, Ind.

Control Is Part of It

Sir—This refers to your editorial stressing management's responsibility for labor productivity (ENR Apr. 9, p. 120).

You certainly have stressed a point that if pursued by all interested parties would improve current construction operations. Control is a function that has been sorely needed in practically all fields.

An organization has been formed to promote the application of scientific principles and techniques of cost estimation, cost control and profitability. With active support by all management it is foreseen where a standard, universal approach can be made on control problems.

What is required is more active participation of more companies in pursuing these problems and standardizing their systems through the leadership of the American Association of Cost Engineers.

F. S. Radwanski
Senior Engineer
The Chemstrand Corporation
Pensacola, Fla.

Editor's Note: Reader Radwanski's interest is control, but the editorial he cites mentioned also the management functions of planning, organizing, directing and coordinating as needing improvement if a day's work is to be achieved for a day's pay.

Bomarc Base A-Es

Sir—Your article on Bomarc bases presents an improbable situation wherein you report that some of the bases have been advertised for bid prior to the selection of the architect-engineer (ENR Apr. 30, p. 24).

For your information, the architect-engineer for the Niagara Falls Municipal Airport, N. Y., base is Seelye, Stevenson, Value & Knecht and Thomas H. McKaig & Associates, New York City.

Gustave Getter
Project Manager
New York, N. Y.

Flexible Pipe is Adequate

Sir—The letter "Flexible Pipe Needs Ruggedness Factor" (ENR July 9, p. 6) invites comment.

Engineers design flexible type drainage structures differently than rigid type structures, since the principles associated with the ability of each type to carry or resist imposed loads vary.

The most widely accepted method of designing flexible drainage structures incorporates the use of Gage vs. Fill Height Tables as published for various conditions of Live Loading by the different specifying agencies. The method has evolved over a period of years, during which its application with subsequent field investigation of results has proven its accuracy and value. It is both conservative and practical from an engineering standpoint and permits the use of flexible metal pipes that are structurally sound and economical.

If the present commonly accepted engineering practice of using Gage vs. Fill Height Tables for designing flexible metal structures is not adequate, the best indication of this would be a history of unsatisfactory structural performance of these pipes. To the contrary, the satisfactory service performance of thousands of flexible metal pipes installed under ordinary and severe conditions of loading have proven the adequacy of this method.

J. Alan Myers
Lane Pipe Corp.
Harrisburg, Pa.

Flexible Pipe Error

Typographical confusion made it difficult to follow the formulas and mathematical solution to the pipe problem in the letter 'Flexible Pipe Needs Ruggedness Factor' (ENR July 9, p. 6). The correct symbols and presentation is shown below.

$W = 5{,}850$ lb.
$C = 0.707W = 4{,}140$ lb.
$e = 0.0761R = 0.0761(3)$
$e = 0.228$ ft.

$$\text{Req'd S.M.} = \frac{C \times e}{\text{flexural stress}}$$

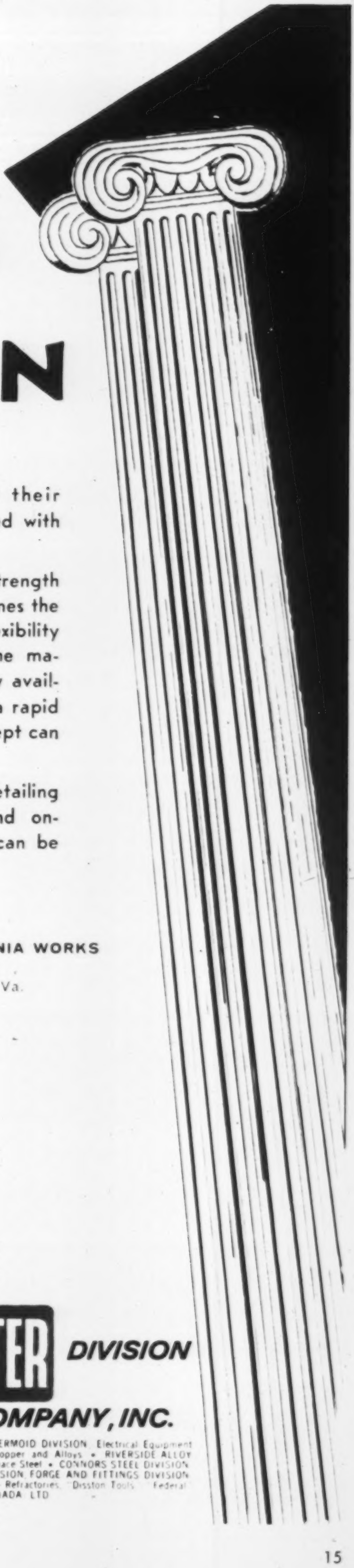
$$\text{S.M.} = \frac{4{,}140 \times 0.228}{20{,}000}$$

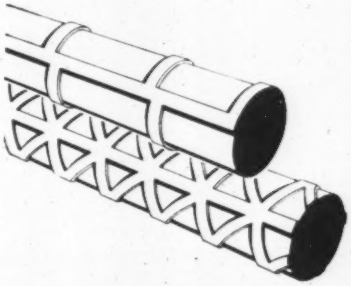
Section Modulus $= 0.0471$ in.^{3}/ in.

Engineers Were First

Sir—Repairs on Hwachon Dam, Korea, (ENR April 2, p. 38) were first started by a construction battalion of the U. S. Army Engineers shortly after the truce was signed in 1953. I visited the dam as a member of the 430th Engineer Battalion and believe the 439th Engineer Battalion placed the concrete stop logs closing the gates blown out in the war. They also put one or both back into operation.

Ivan L. Pfalser
RR 2, Caney, Kan.





the GREEKS had a COLUMN for it

But modern architects support their buildings with concrete reinforced with steel.

They know that HIDDEN strength from steel reinforcing bars combines the utmost in reliability with the flexibility that modern design requires. The materials are economical and locally available. Construction proceeds at a rapid pace and almost any design concept can be implemented.

And builders appreciate the detailing service, accurate fabrication and on-schedule delivery that Connors can be depended on to furnish.

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Tapping a 1" house connection under pressure in Lock Joint Concrete Pressure Pipe.

TAPPING LOCK JOINT CONCRETE PRESSURE PIPE

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Thousands of field installations have proved the ease and efficiency with which LOCK JOINT CONCRETE PRESSURE PIPE can be tapped under pressure. Service connections as well as larger outlets up to 36" in diameter can be made without interruption of service or damage to the line.

In addition to safe, easy tapping of all diameters, LOCK JOINT CONCRETE PRESSURE PIPE also combines long life, dependability, permanent high carrying capacity, ease of installation, and negligible maintenance. These features make it the logical choice for distribution piping as well as water transmission lines.

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ENGINEERING NEWS-RECORD
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THE CONSTRUCTION WEEK

ALUMINUM PRICES MAY GO UP—A possible strike, bringing some shortages and an eventual wage boost, increases chances for higher aluminum prices this year. (For an analysis of the steel strike and its impact on construction labor relations, see p. 74.)

SPEED UP—OR ELSE!—Ohio Highway Director Everett S. Preston has warned 82 contractors to step up production or lose their qualifications to bid on future state contracts. He charges some contractors have been "uncooperative" in efforts to overcome time lost in a 15-day operators' strike, a rainy 1958 construction season and January floods. The threatened contractors hold $125 million worth of contracts on 134 projects.

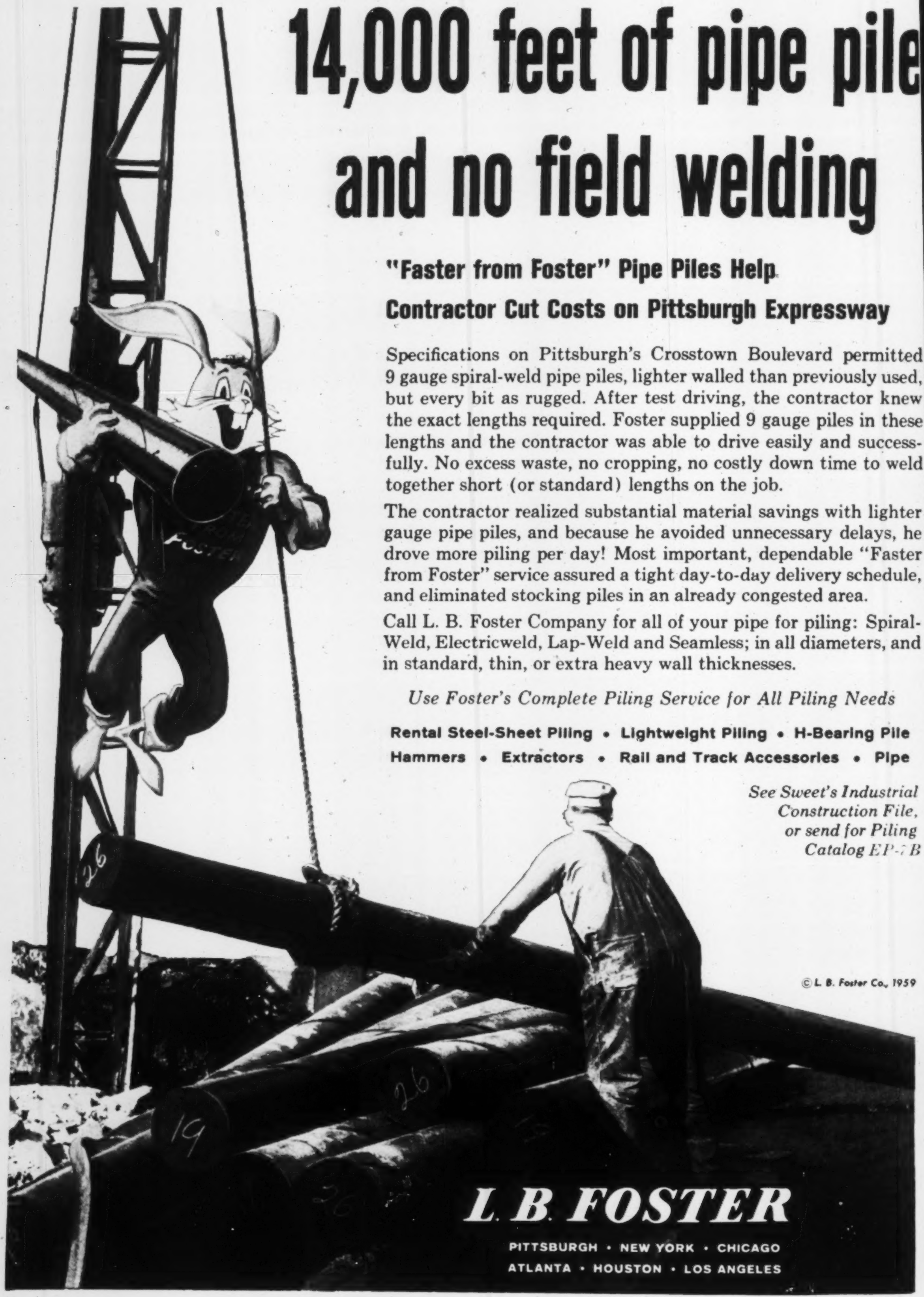
HERE IT IS AGAIN—Bid opening day has come again for the Air Force Academy Chapel (ENR Dec. 25, 1958, p. 23). Original bids were all rejected by the Air Force in February as "excessively high." Then, $4.54 million was high; low was $3.83 million. Now, with some plan revamping and pencil sharpening, Robert E. McKee Construction Co. of Santa Fe, N. M., is apparent low bidder at $3.5 million. High bid was $4.12 million.

NEARING A RECORD?—Construction contracts for water resource development may come close this year to last year's $1.35-billion record. Waterworks contracts let in the first half are 40% above 1958's first half total of $157.3 million. But earthwork-dam-waterway construction is down 28.8%, to $430.3 million.

LOWER SCHOOL COSTS?—Pennsylvania's superintendent of public instruction estimates the state could save "hundreds of millions of dollars" in school construction by varying class size. Median size would go up to 32 or 35 from the present 27. This, he says, would cut 1,774 classrooms from the 10,590 the state will need in the next decade. The plan has raised a storm among those who say small classes are best.

STATES' WATER RIGHTS—The states are pushing for federal recognition of state supremacy in the use and control of water within their boundaries. A House subcommittee on water legislation heard spokesmen protest a growing tendency by federal officials to claim paramount water rights for federal functions.

SMALL START, BIG PLANS—A group of Alaskan construction contractors has set up a steel mill in Seattle. Current production of merchant bars is 25 tons daily. The company, Alaska Steel Mills, Inc., is headed by Lloyd Martin, president of Reed and Martin, Fairbanks construction company. He hopes to open another mill at Fairbanks next year or in 1961.



14,000 feet of pipe pile and no field welding

"Faster from Foster" Pipe Piles Help Contractor Cut Costs on Pittsburgh Expressway

Specifications on Pittsburgh's Crosstown Boulevard permitted 9 gauge spiral-weld pipe piles, lighter walled than previously used, but every bit as rugged. After test driving, the contractor knew the exact lengths required. Foster supplied 9 gauge piles in these lengths and the contractor was able to drive easily and successfully. No excess waste, no cropping, no costly down time to weld together short (or standard) lengths on the job.

The contractor realized substantial material savings with lighter gauge pipe piles, and because he avoided unnecessary delays, he drove more piling per day! Most important, dependable "Faster from Foster" service assured a tight day-to-day delivery schedule, and eliminated stocking piles in an already congested area.

Call L. B. Foster Company for all of your pipe for piling: Spiral-Weld, Electricweld, Lap-Weld and Seamless; in all diameters, and in standard, thin, or extra heavy wall thicknesses.

Use Foster's Complete Piling Service for All Piling Needs

Rental Steel-Sheet Piling • Lightweight Piling • H-Bearing Pile Hammers • Extractors • Rail and Track Accessories • Pipe

See Sweet's Industrial Construction File, or send for Piling Catalog EP-7B

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WASHINGTON OBSERVER

- **Will Ike intervene in steel strike?**
- **House battle may defeat labor reform**
- **States vie for Stanford's accelerator**

● **Threats of new steelworker strikes in aluminum plants would help push President Eisenhower and his aides toward more federal intervention** to get a settlement and restore labor-management peace.

Secretary of Labor James P. Mitchell's "fact-finding" on steel is a big step. It doesn't mean the Administration will wind up settling the strike by recommending specific terms—but Mr. Mitchell's kind of fact-finding is a necessary step should the government decide to make such a move.

So far, Washington officials see no steel pinch for defense contractors or anyone else. Officials say they see no real shortages until well into September, if the strike runs that long.

Commerce Department's Business and Defense Services Administration is all set up to divert available supplies to any defense contractor who needs steel.

Washington wants the strike over as soon as possible, mainly because of the strike's impact on inflation. The theory is this: A long strike, particularly at a time when the economy is on a vigorous upswing, will be inflationary even if the strike finally ends with a "no price hike" wage settlement. With steel demand on the rise, those contractors or fabricators who see themselves running out of material will be bound to bid up prices at a time when the outlook for business is so good.

—

● **A bitter debate over labor reform legislation is shaping up in the House. It could defeat the chances for any bill this session.**

There's only one offsetting factor: The Democratic leadership, irked by do-nothing charges, needs a labor reform bill for political reasons.

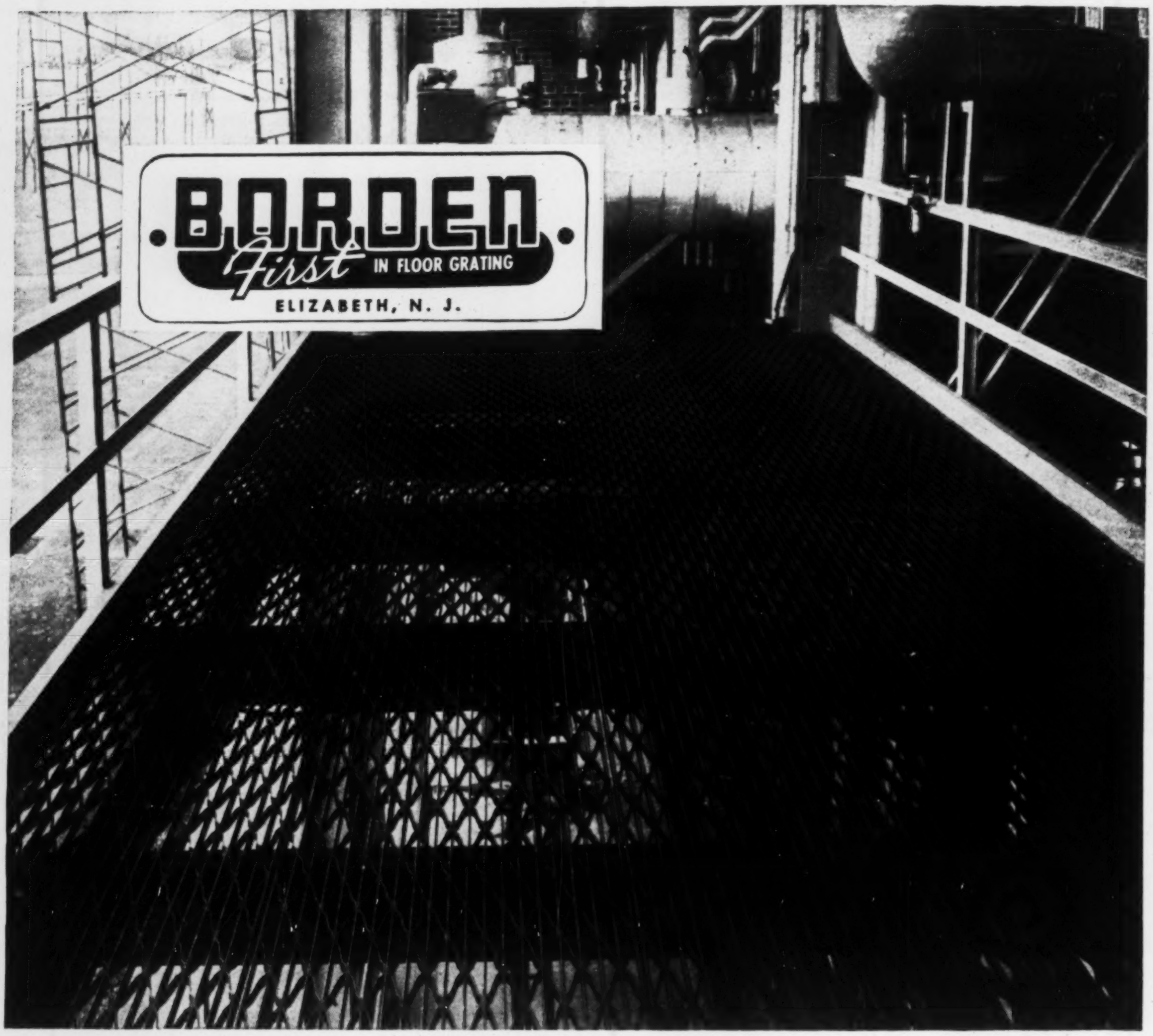
The bill that came out of the House Education and Labor Committee last week has little support. The AFL-CIO, for example, calls it "unacceptable"; the Chamber of Commerce condemns it as written to "Hoffa's specifications."

First indication of floor efforts to toughen the committee bill came this week. Reps. R. P. Griffin (R., Mich.) and P. M. Landrum (D., Ga.) introduced a bill in line with Administration proposals. It would tighten the ban on secondary boycotts, restrict organization picketing, outlaw union pressure on employers in "hot-cargo" situations and give the states more authority to solve "no-man's land" disputes.

—

● **Some Washington lawmakers are debating where to put a two-mile long, $105-million electron accelerator proposed for Stanford University**. Washington State's congressmen think it should go in an abandoned railroad tunnel in their state, thus saving about $16 million in tunneling costs. One senator is plugging for use of an old mining tunnel in Nevada. In the end, it's likely to be built as planned at Palo Alto, Calif., home of Stanford.

However, construction may be delayed unless the necessary appropriations can be handled quickly in the Senate, where the House-passed Atomic Energy Commission money bill is being considered. Approval by the Joint Committee on Atomic Energy has been delayed while the committee considers proposals for alternate locations.



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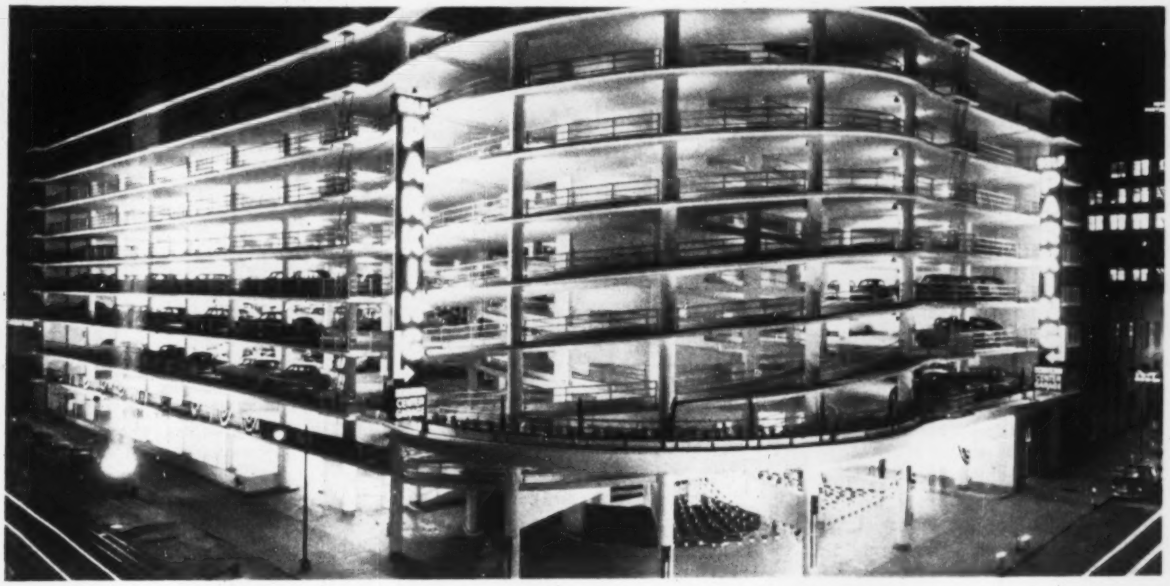
Plants at: UNION, N. J. — LEEDS, ALA. — CONROE, TEXAS — BEETON, ONTARIO

Parking lots take too much space, don't park enough cars so . . .



. . . They're giving way to multistory parking garages.

Parking: No Place to Go but Up

"The day of the parking lot is about gone. Multilevel parking structures must be constructed on valuable property near business districts with facilities that enable the driver to get his car in and out in a hurry."

That's how one official sums up a development that is bringing an increasing volume of construction business.

The situation: too many cars for too little ground space.

The result: a countrywide surge in construction of urban parking structures.

- **In San Francisco,** $31.5 million worth of off-street parking facilities have been completed during the past 19 years or are now under development. About 40,000 more spaces are needed.
- **In Chicago,** scheduled to go up this year is the twelfth garage to be built under a $50-million parking program begun six years ago.
- **In New York City,** $9.8 million has been allocated for 10 parking structures now under design or construction. Another $9.5 million for seven new buildings has been recommended.
- **In Washington, D. C.,** a $7.6-million, seven-year parking construction program has been announced.
- **In Los Angeles,** a $50-million bond issue to finance a parking program is in the talking stage.
- **In Boston,** the city's first mechan-

ical garage opened last year. Now there's a growing demand for more facilities to take the pressure off the narrow, winding downtown streets.

Parking structures are going up in smaller cities too. Parkersburg, W. Va., has a seven-level mechanical garage. And construction contracts were awarded this month for structures in Newark, N. J., and Rochester, N. Y.

This rapid growth of parking structures is bringing experiment and change in the type of structures built. Here's a summary of what's being done, and what you can expect to come.

The garages you see today come in several types—enclosed or open sides, one story or several stories high. The more expensive enclosed garages have their own heating, lighting and ventilation. Some have elevators for interfloor travel, others have ramps.

Now growing in favor are mechanical garages—where the cars are parked automatically. This type can handle more cars in less space with greater efficiency.

Parkersburg's new one is a good example. The car parking system consists of a pair of mobile towers, an elevator in each of the towers and a car dolly on each elevator. The tower moves horizontally, while the elevator moves up and down—and places the car in a designated spot. It takes an average of 2 minutes 22 seconds to park one car and bring back another. Operations are controlled by push button.

Another trend lies in the growth of underground garages—brought about by the space shortage. In the past, this type seemed too expensive because of extra construction costs—waterproofing, forced ventilation, extra lighting.

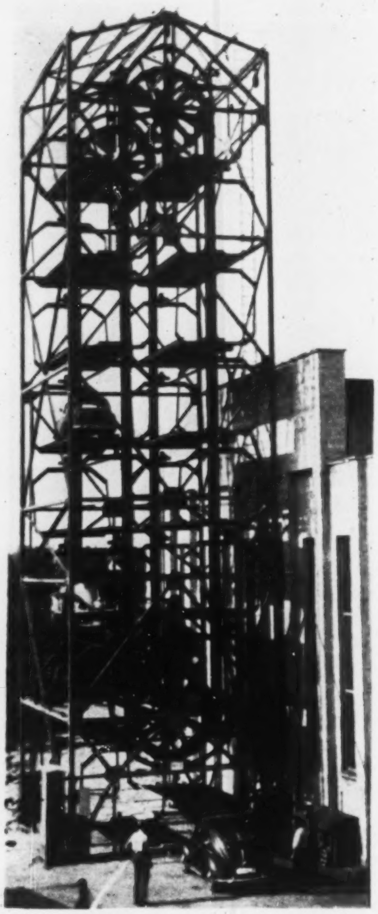
But underground parking cuts the heavy investment in land acquisition, which is a major chunk of the total cost in built-up areas.

Several cities have recently built financially successful underground units, and others are considering such projects:

- **In Pittsburgh,** a six-level underground garage accommodates 890 cars.
- **In Kansas City,** a city-owned underground garage parks 2,000 cars, cost more than $4 million to build.
- **In Chicago,** one of the city's biggest money-makers is an 2,359-car underground garage that cost $8.3 million when constructed in 1954.

Cincinnati, Washington and Newark have underground facilities in various stages of planning, and one suggestion for Boston's parking problem is a multilevel garage under historic Boston Common in the heart of the city.

For designers, the parking problem holds out opportunities for imaginative solutions. In Germany, one parking structure looks and moves like an elongated Ferris wheel. It operates on a conveyor system. Most important: It holds 20 cars, requires only about 50 sq yd of ground (picture).



Ferris wheel garage in Cologne, Germany, covers only 50 sq yd of space.

The drive to clear city streets is also bringing a surge in parking construction in suburban areas and at expressway terminals.

The Chicago Association of Commerce has approved plans for four multistory garages at the terminals of the city's rapid transit lines. Cost is estimated at between $30 million and $40 million. (That's in addition to the $50-million program now under way.)

St. Louis is considering expansion of its two-year-old shuttle service from fringe parking areas. The Public Service Co. presently operates shuttles from a 100-car parking lot in the western end of the city and from a 350-car lot in the northern end.

Philadelphia, a pioneer in fringe parking systems, estimates it has saved $1 million of the city's rentable land by constructing parking areas at outlying railroad stations.

Where does the money come from? Parking is a city problem and generally a city expense. Construction is frequently financed by bonds, sometimes by capital and general funds or income from curb meters, occasionally by assessing nearby businesses—the greatest beneficiaries of the facility.

Cities frequently amortize the debt and pay for maintenance by leasing the facilities to private concerns.

But hard-pressed city budgets can rarely put parking near the top of the priority list. Municipalities are therefore pushing private investment with cooperative programs, easier building codes and new zoning regulations.

New York's low-rate city garages cater to the short-time parker, but discourage all-day parking with high rates. The city thus hopes to meet the shopping needs of some, without discouraging construction of private facilities, generally aimed at the all-day parker.

Proposed changes in Chicago's regulations governing garages are aimed at encouraging construction of more privately owned garages similar to those built by the city. The changes would eliminate such costly requirements as solid walls and sprinkler systems. They would permit construction of "birdcage" garages, where exterior walls consist of steel strands under tension between parapets and the floor above.

In San Francisco, new commercial buildings must now include off-street parking. Homes and apartments have had to include one parking space for each dwelling unit since 1955.

Similar requirements are on the books in Los Angeles and Burbank, Calif., and Bethlehem, Pa. New York, which requires parking facilities in new apartment houses, is considering a similar requirement for professional buildings.

There are signs pointing to increasing interest on the part of private investors in downtown parking facilities. Merchants, for example, are discovering that cooperative parking development is one way to combat the inroads of suburban shopping centers; and in San Francisco, the city was able to withdraw recently from two planned projects—because private investors offered to do the job.

Growing use of parking authorities should give impetus to moves by the cities to encourage private construction of garages. Vining T. Fisher, general manager of San Francisco's Parking Authority, points to a two-pronged method. The authorities can:

- Focus attention on desirable locations, perhaps submitting preliminary engineering studies.
- Provide a good example by building a garage as a public project.

New Orleans has a different problem. Traffic engineers there say they can't give municipal help unless state legislation is provided allowing the city to construct garages and lots.

Road Hearings Range Far and Wide . . .

For three days last week, the House Ways and Means Committee listened to, lectured to, and needled a parade of government and industry witnesses as the committee sought a solution to the financial ills of the highway program.

When the public hearings were over, however, the approach that Congress will take to the road problem was as much in doubt as it was before the hearings started.

Without endorsing any one solution, the committee aired the various proposals—increasing the fuel tax, bond financing, cutting back the program, earmarking additional excise taxes, outright borrowing from the Treasury—and combinations of proposals.

On Monday, the committee went into its first executive session in an attempt to reach a decision on the matter. A decision could come sometime this week.

The three days of hearings did seem to show that the Congressional committee charged with raising the money to build highways also wants a bigger voice in how the money is spent.

The legislators and some witnesses took full advantage of the hearings to air the complaints about the road program they keep hearing from the voters back home. They wanted to know about the defense aspect of the highways, the high cost of routing through cities, and whether states should pay a bigger share of the roads costs.

In many cases, the committee members were apparently just getting gripes about the road program off their chests; in others they were laying the groundwork for possible changes in the program when it comes up for a major overhaul in 1961.

Here are some of the points and criticisms that came up:

- The present 90% federal, 10% state matching formula. In view of the financial problems present and those that may come in ensuing years, Rep. Thomas Curtis (R., Mo.) advocated a switch to an 80-20 matching formula. The Administration hardly listened, because officials know that the states are having their problems in raising matching funds.
- Associated General Contractors' spokesman M. Clare Miller appealed to the legislators not to slow the roadbuilding program. If this happens, he warned, many small contractors "would face bankruptcy." The AGC, Mr. Miller said, "will support any reasonable financial legislation" the committee recommends.
- Gen. Louis Prentiss, executive vice president of the American Road Builders' Association, was concerned that the federal government "may return to a stop-and-go system of financing." Such retrogression, he said, would be "disastrous" to the highway industry.
- R. R. Bartelsmeyer, president of the American Association of State Highway Officials, said that when the federal government speeded up the program in 1958, "the state highway departments took this action as an assurance that they could go ahead and award contracts." It is now up to the federal government to uphold its end of the bargain, he said.

Although the committee hearings were used to air complaints across the board, some could develop into items of major importance.

Receiving particular attention was the place the new highways have in national defense. The point: Why should motorists foot the full bill for highways when defense is a matter to be financed from general revenue?

Defense reasons mainly determined the location of 1,102 miles of Interstate roadways allocated to states in 1957. This mileage was parceled out to states after the Bureau of Public Roads found it could lay out the Interstate network with fewer miles than the 40,000 authorized by Congress.

The legislators made it clear that they didn't like to make motorists pay a special tax for these national defense benefits. And they chided the Administration for wanting to do this. A fairer approach, they said, would be to tap the general revenue funds, either directly or by putting more excise taxes in the Trust Fund, for part of the road building cost.

Sharp criticism was also leveled at the BPR for allocating the extra mileage when it was apparent that a financial crisis was already developing.

Rep. Victor A. Knox (R., Mich.) wanted to know why Interstate highways were routed through cities as well as around them. To the reply that such routes boost the economy of the city, he countered, "then do you not feel the cities have some responsibility" to build such roads themselves. Mr. Tallamy agreed.

. . . While States Keep Cutting

Four states announced last week that they were canceling or postponing highway bid openings because of the danger of being left committed and stranded without federal matching funds.

Any further advertising of projects will also be held off until Congress passes financing legislation (see above).

In Oregon, the State Highway Commission postponed indefinitely a bid opening set for July 21 on $5.3 million worth of highway construction because of the unsettled federal-fund situation.

The commission said it would also hold off all further contracting involving federal matching money until Congress acts.

Twelve projects are involved in the postponement. These include two large structures planned at Judkins Point, near Eugene—an 1,800-ft bridge over the Willamette River and a 747-ft overcrossing of the Southern Pacific Railroad mainline.

In New Mexico, the Highway Commission has put the brakes on the state's multimillion-dollar roadbuilding program by canceling a $4-million-plus highway contract-letting scheduled for July 23.

Depletion of federal funds was given as the reason. It's not only the possibility of no federal money for next year that has aroused caution. The federal government won't be able to deliver all of New Mexico's $29 million promised for the current fiscal year if the deficit remains in the Highway Trust Fund. The state has already committed all available funds, and when construction is completed on projects under way, the highway department will owe contractors nearly $7 million.

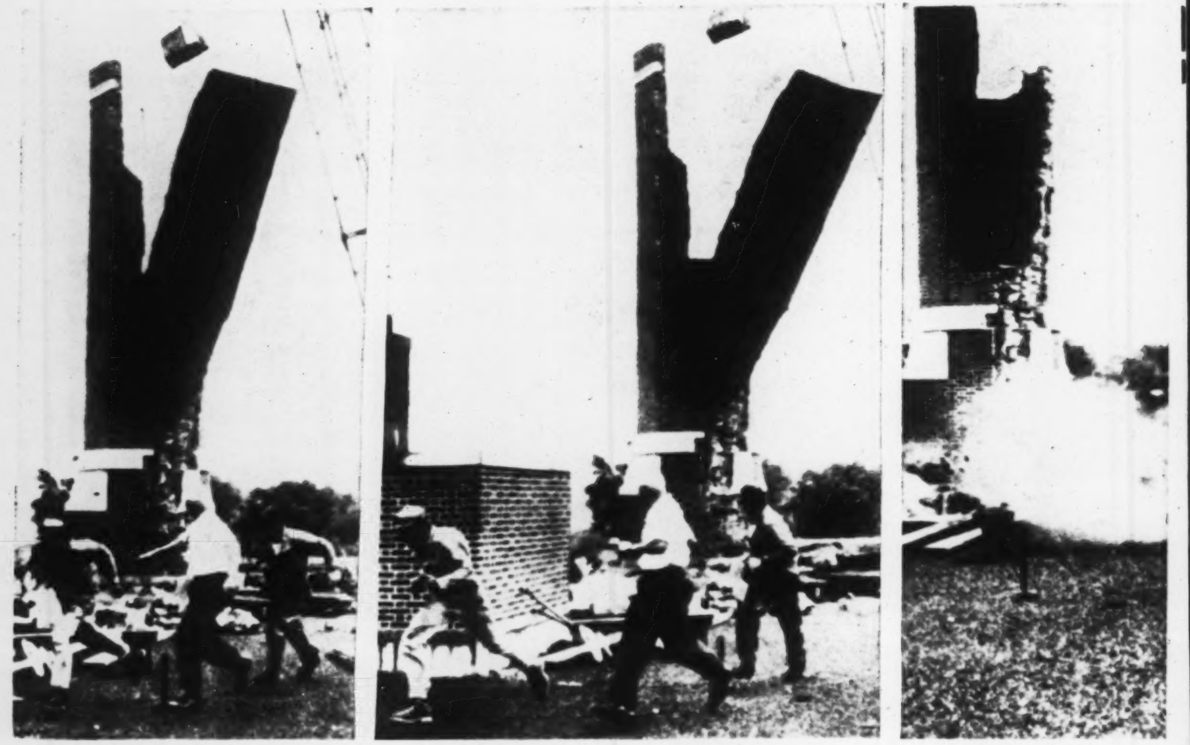
In Ohio, the Highway Department is canceling an August 18 bid opening for $2 million worth of grade separations. Again, the reason given is the federal government's delay in making 1961 highway allocations—plus failure to obtain agreement with the railroads involved.

The next highway bid opening that may be affected is scheduled for August 4; another is tentatively set for September 1.

In Virginia, the State Department of Highways will not advertise any more Interstate projects for contractors' bids until the situation in federal funds clears up.

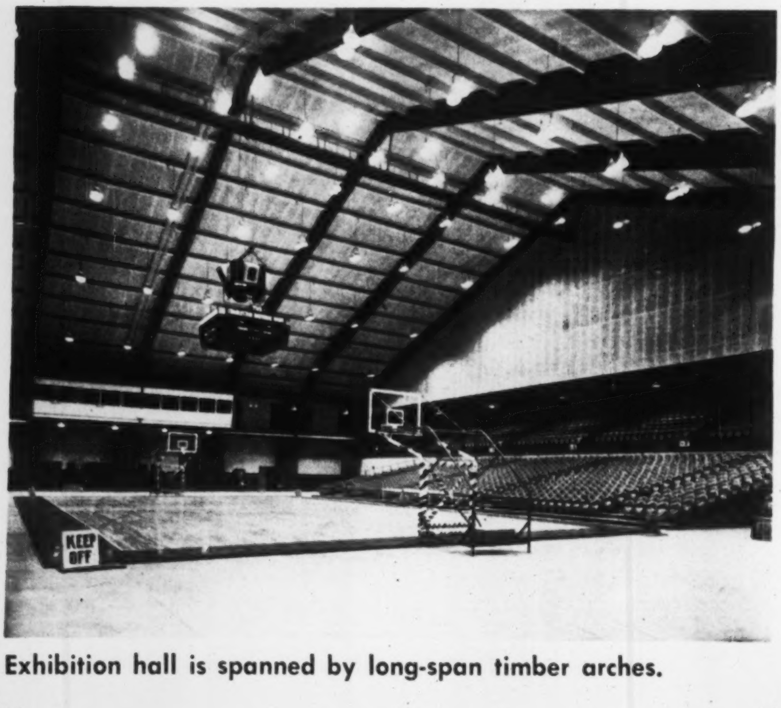
There is also the possibility that the federal government may not be able to pay its share of construction presently under contract unless more money is forthcoming for the Trust Fund.

And unless something is done by July 31, the Highway Department will defer requesting bids for seven primary highway jobs, nine secondary and one urban project as well as the Interstate projects.



Chimney Wall Comes Tumbling Down

It was a close call for workmen in East Orange, N. J., last week when a 40-ft-high school chimney they were demolishing unexpectedly caved in. Lightning had struck inside the chimney two days before, loosening mortar and brick from top to bottom. The workmen managed to scurry clear when the chimney fell, but the impact of the falling brick damaged the roof and the second floor classroom of the two-story Clifford J. Scott High School.



Exhibition hall is spanned by long-span timber arches.

Redesign Cuts Costs

The $2.5-million Charleston, W. Va., Civic Center originally was designed with steel framing. But the need to cut construction costs led to a redesign of the 206 x 176-ft roof system in wood, with a saving of $20,000. Cost of the building came to $19.72 per sq ft.

Its 36,000-sq-ft exhibition hall, which will seat 7,200 for most athletic events, is spanned by 206-ft laminated timber arches. Spaced 25 ft c-c and rising 66.5 ft above the floor, the arches support glued-laminated purlins, which carry the roof deck.

Timber Structures, Inc., Portland, Ore., fabricated the wood framing. Kenhill Construction Co., Charleston, was the general contractor. Three Charleston architectural firms collaborated on the design—Martens and Son, Irving Bowman, and Glen C. Hancock.

Russians Slow A-Power Program

Nuclear planners in the Soviet Union are running into the same problem that has plagued the American atomic power development program—unexpectedly high costs. As a result, the Russians are downgrading their building programs.

The latest word on the situation in the Soviet Union came last week from Chairman John A. McCone of the Atomic Energy Commission. While testifying before the Joint Committee on Atomic Energy, Mr. McCone told of a conversation between Adm. Hyman Rickover and First Deputy Premier Frol Koslov during the Russian's recent visit to America.

Mr. Koslov told the atomic submarine expert that his government has become somewhat disappointed with the prospects for nuclear power because Soviet scientists 'seriously underestimated" costs.

The Soviet Union, as a result, will not go ahead with its program as rapidly as planned, Mr. Koslov said.

Last fall, at the Second Geneva Conference on the Peaceful Uses of the Atom, the Soviet Union announced it had brought to full power a 100-megawatt power and plutonium reactor. And the Russians were known to be planning a dozen-odd additional plants. Recently it has been apparent the Russians were not meeting their announced construction schedules.

Nations in Western Europe in recent months have slowed their own timetables for atomic power development— chiefly because of favorable coal prices and decreasing worry over oil supplies.

Comparative cost figures for various means of power generation abroad are hard to come by.

However, the U.S. experience is probably indicative.

Construction costs for virtually every reactor project in the U.S. have been scaled sharply upward. The variables are so great that contractors hesitate to sign fixed-cost agreements.

The result has been continuing uncertainty in the utility industry over just what can be expected, in economic terms, from atomic power plants as compared with conventional plants.

The average steam plant in the U.S. produces power for 8.5 mills per kwh—and this includes older, less economic facilities. Probably the average for the newer plants is closer to 6 or 7 mills per kwh. And nuclear power must compete with these.

Hydropower costs, of course, are even lower—about 4 mills per hour.

The most dependable guides to atomic costs, says AEC, are the four design studies recently completed for four power reactor concepts—pressurized water, boiling water, organic cooled and heavy water.

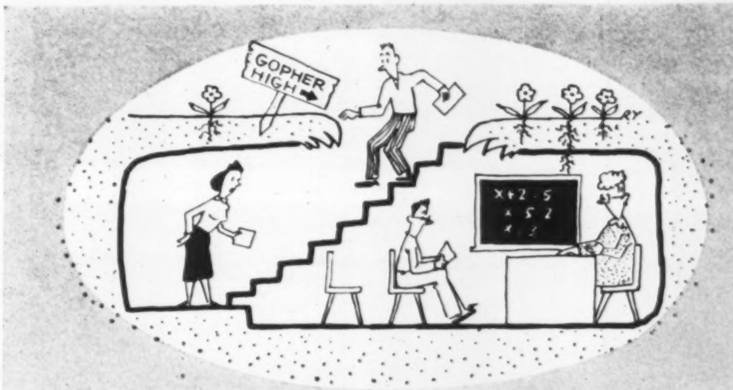
The conclusion was that a large plant—200 to 300 megawatts capacity—could produce power for 8 to 9 mills per kwh for the first three concepts, and some 11 mills per kwh for heavy water.

And these are only theoretical estimates. They still must be proven out in practice.

Utilities will have a little more experience to go on when four large reactors now under construction for utilities go critical in 1960 and 1961.

However, Consolidated Edison predicts costs from its Indian Point, N. Y., nuclear plant—one of the four—at 17.5 mills per kwh. The lower estimates made in the AEC design studies are based on advances in the art since design of plants now under construction.

Since even these more advanced plants would at best be competitive with conventional plants only in high-cost areas of the country, utilities apparently are reluctant to make the plunge. And the federal government, up to now, has refrained from building any large-scale plants beyond the one at Shippingport, Pa., where costs are about 40 to 60 mills per kwh.



'Gopher High': Ultimate in School Economy

Taxpayers complaining of schools with too many "architectural frills" in Phoenix, Ariz., have found their suggestions for corner-cutting topped by the head of the school system's construction and maintenance unit.

First, taxpayers were critical of round buildings, quartz panel sunshades and glass walls that required other protective panel-walls to keep out desert heat.

So William Swisher, construction superintendent, suggested windowless buildings on square plans, which supposedly save $1 million out of every $4 million spent per school.

Architects and progressive-education advocates complained. So Mr. Swisher, with tongue in cheek, outlined what may be the ultimate in economical school construction:

Excavate a large hole 15 ft deep. Build a single level school in the depression and cover it with 5 ft of earth. Among the advantages noted by Mr. Swisher:

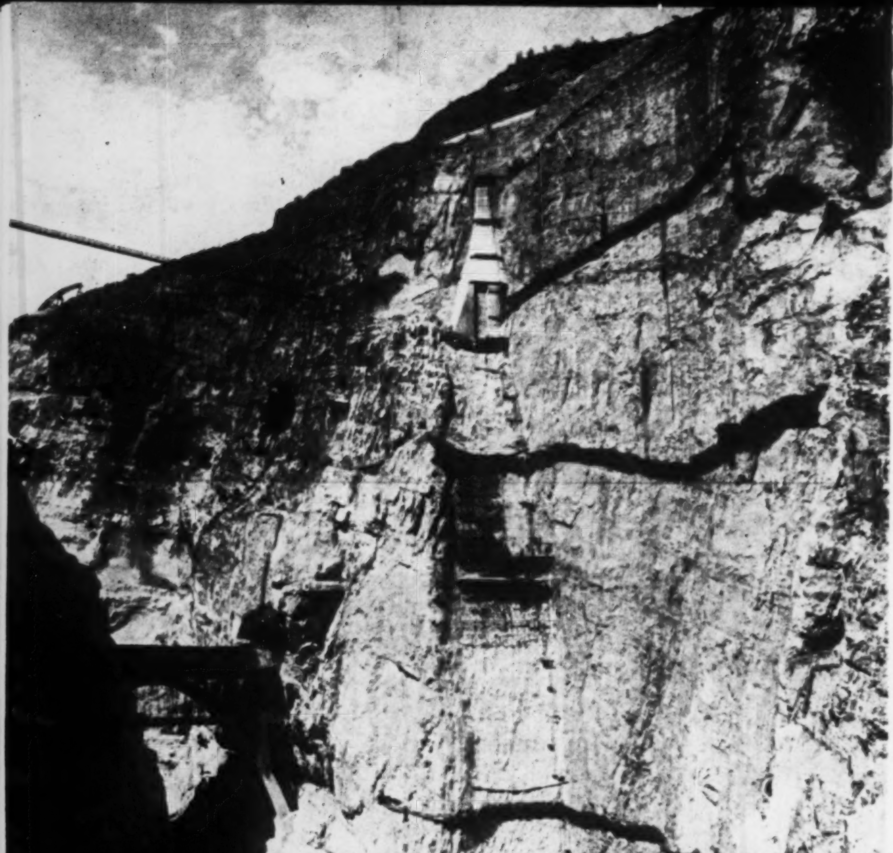
- **No frills at all on exteriors. (You couldn't see them.)**
- **No costly windows. No skylights, curtains or venetian blinds. No broken glass to replace or dirty glass to clean.**
- **No heat loss or gain through windows. Lights are usually on at all times anyway, so there's no problem there, either.**
- **No traffic noise or other distractions.**
- **No fancy fencing, panels, sunshades or sidewalks.**
- **No campus traffic hazards.**

Student control would be simple—only one way in and out. Daily attendance checks for state school-operations payments would be a breeze.

And vents from the restrooms could be projected up through the football field to serve as goal posts.

Mr. Swisher's clinching argument for "Gopher High" is that the design for a 2,500-student high school could serve as a bomb shelter for 5,000 persons.

"That way, the federal government would undoubtedly pay for the whole thing, affecting the ultimate saving for local taxpayers."



Highest Arch Dam Is Half Up

What will be the world's highest arch dam is at the halfway point in construction. Vaiont Dam in northern Italy, will rise 870 ft when completed late next year.

Blocking a deep and narrow gorge of the Piave River, the slender, double-curvature structure will have concrete volume of only 475,000 cu yd. Its crest length will be 623 ft. Dam thickness at the top is 10 ft, increasing to 75 ft at the base.

Vaiont, owned by the Societa Adriatica di Elettricita, Venice, will increase the firm's generating capacity by 220,000 kw.

Bids Halve Estimates For California Bridge

Bids came in at almost half the engineers' estimates for a 6,215-ft-long bridge in California. The structure will span the Carquinez Strait between Benicia and Martinez.

Low bid for the substructure was $5,760,000; state engineers had estimated $10 million.

Low bid for the superstructure was $8,469,485; estimate was $14 million.

Yuba Consolidated Industries, Inc., through its Judson Pacific-Murphy Division, was low bidder for both jobs. On July 22 it beat out eight bidders for the substructure; the next day it underbid five others for the superstructure.

The deck-truss type bridge will have 19 piers, nine of them in water. Bridge deck will be 62 ft wide between curbs and a maximum of 187 ft above water.

The California Toll Bridge Authority will open bids July 28 on revenue bonds to finance the project. Total project cost, including appurtenances, had been estimated at $34 million before the low bids came in.

Tolls will be charged to pay off the bonds. Also, tolls from the twin parallel Carquinez bridges will be pledged to redeem the Benicia-Martinez Bridge bonds.

Project is scheduled for completion in summer of 1962.

US Tries TV to Perk Up Sales of Surplus Equipment

Closed-circuit television will be used for the first time this fall to stimulate sales of surplus military equipment, including construction machinery.

The first auction will be held October 7 when heavy construction equipment, roadbuilding machinery, generators, trailers, machine tools and general engineer supplies will be placed on the block. Original value of the equipment is $1.5 billion.

The all-day auction will be handled by the Army Quartermaster Corps.

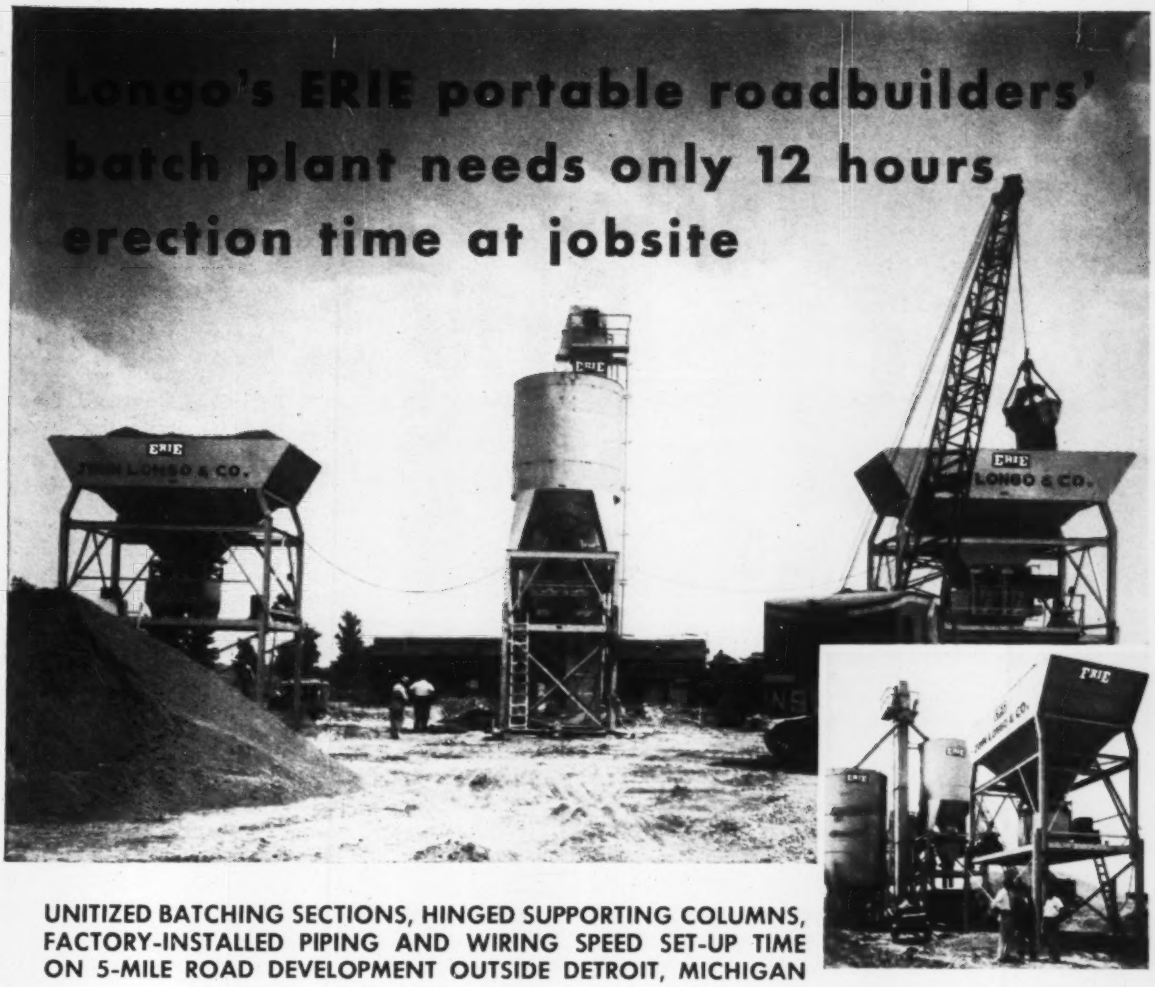
Surplus equipment will be exhibited at the Army's Granite City, Ill., Engineer Depot, the Air Force's Shelby, Ohio, Depot and the Navy's Philadelphia Shipyard.

Prospective buyers can view the sales on large-screen television in Boston, New York City, Philadelphia, Columbus, Chicago and St. Louis.

Bidders previously had to travel to the auction sites to inspect the property or bid solely on the basis of written descriptions.

The prospective buyers at the TV-viewing halls will be able to bid by two-way radio systems. Three-camera mobile TV units will operate at each auction site.

Longo's ERIE portable roadbuilders' batch plant needs only 12 hours erection time at jobsite



UNITIZED BATCHING SECTIONS, HINGED SUPPORTING COLUMNS, FACTORY-INSTALLED PIPING AND WIRING SPEED SET-UP TIME ON 5-MILE ROAD DEVELOPMENT OUTSIDE DETROIT, MICHIGAN

"We are well pleased with the construction, operation and performance of our Erie Portable Roadbuilders' Batch Plant. In addition, the service we have received from the Erie Strayer Company has been prompt and competent," reports Ettore (Art) Palumbo, partner.

Unitized Batching Sections for aggregate bins and cement silo and hinged supporting columns are the keynote to Erie's fast set-up time.

The hinged columns are laid along the ground and attached to the Batching Section horizontally. As the section is raised, the columns swing into position coming to rest on column seats that give them extra support. Bolts make each column rigid and secure.

The Unitized Sections are pre-assembled. Batchers, scales and piping are set permanently in place at the factory. All you do is bolt the sections into place on the supporting columns.

Wiring, too, has all been done at the factory. Just plug in the quick connect cables from master control to elevator and screw conveyor motors. The one-piece bin hoppers go into place just as easily. Once the plant is set up, one man operates it.

In Longo's 3-stop plant shown above, sand is batched at the first stop with two individual batchers. At the second stop, the truck takes on cement from two individual batchers. Two sizes of stone are delivered at the third stop from two cumulative batchers weighing simultaneously.

After discharge by truck driver or operator, the batchers recycle automatically. This high-speed operation can give Longo more than 400 batches per hour.

Air-operated gates are electrically controlled. Manual over-ride is provided. Yes, the plant meets all federal, state and municipal requirements. May we tell you more? Write or call today. Dept. R 79

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Vibroflotation®

was used to compact sandy soil for a Baptist Church in Florida.

Despite the gospel warning, the foundations for the new educational building of the Allapattah Baptist Church, Miami, Florida, were built on sand compacted by Vibroflotation.

128 compactions were made to a depth of 16 feet below the bottom of footings to obtain a minimum 70% relative density. By using Vibroflotation, the parishioners saved $4,000.00 over alternate piling solution.

Vibroflotation stabilizes existing loose granular soil so effectively that the excavation retains a neat, shear wall of sand even after placement of reinforcing steel and the pouring of concrete.

Many other churches stretched their construction dollars by using Vibroflotation. Recent church foundation work includes: In Florida—First Methodist Church, Hialeah; St. Patrick's Roman Catholic Church, Largo; Church of The Incarnation, Sarasota; Blessed Trinity Parish Church, Jacksonville; First Presbyterian Church, Coral Gables; New Provisional Church, Dunedin; and Catholic educational buildings at Pensacola, Orlando and St. Petersburg. In Pennsylvania—Parnassus Presbyterian Church, Parnassus.

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Canal Company Taking Bids For Schools and Housing

The Panama Canal Co. is taking bids for what it calls the largest school and housing project offered for contract in several years. Bids will be opened August 31. Bids may be for an entire lump sum or on a variety of four combinations, so PCC hasn't set a specific cost for the project other than to say it will be "several million dollars."

Work will involve two elementary schools, two junior high schools and 29 houses totaling 45 living units. The schools will be in Diablo Heights and Los Rios; the housing contract is the second step of an almost total rebuilding of the town of La Boca.

Around the World . . .

- **More Capitol work**—The Architect of the Capitol is taking bids for an additional pedestrian tunnel linking the old and new Senate office buildings. Bids are due August 5. The existing tunnel links the buildings on the south side; the new one will do the same on the north side.

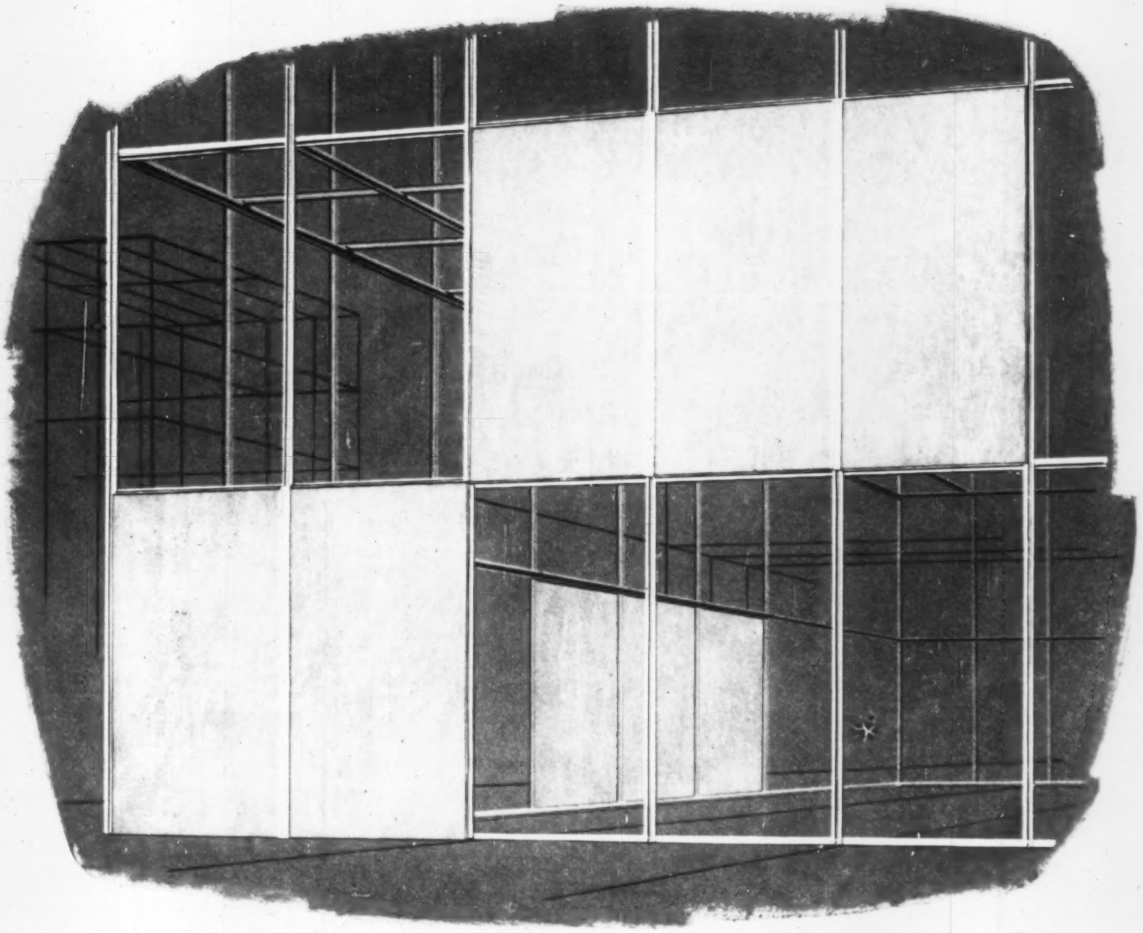
- **Ready for Sahara oil**—France's oil strike in the Sahara Desert is sparking big construction. First it was a pipeline to the Mediterranean coast. Now, at Marseilles' oil port of Lavera, a mole extending 985 ft from shore has just gone into service as an unloading dock for tankers. Next will be a pipeline northward to new oil refineries along the Rhine.

- **Dateline, EJC**—Engineers Joint Council will begin publication of a newsletter in September. It will be called "Engineer" and will appear nine times a year.

- **Sun road lengthens**—Italy's Highway of the Sun will be extended 375 miles to Reggio Calabria, at the southeast tip of the country. The highway project had been scheduled to end at Naples.

- **Who'll cut the grass?**—Four-acre homesites will be the rule in New Canaan, Conn. The Connecticut Supreme Court of Errors ruled the zoning requirement was not an abuse of authority.

- **Bids can wait**—The Florida State Road Department will not advertise for bids on highway and bridge construction until all right-of-way for each job has been acquired or is in sight. This policy is the result of several withdrawals of bids by contractors who had been delayed by incomplete right-of-way acquisition.



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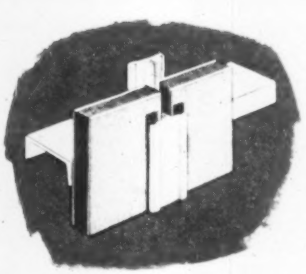

Here are modern panel curtain walls that provide unusual durability and at the same time can save erection time and money.

Transitop panels are big—4' x 8' to 12' and 11/16" to 2" thick. They cover large areas fast. They're rigid and strong, yet light in weight. Dead load is reduced—and framing can be lighter in construction. Once up, Transitop continues to prove its economies—it is virtually free of the need of any maintenance.

The reason is, Transitop consists of two surfaces of rock-hard, compressed asbestos and cement with an insulating core sandwiched between. It stands up to wind, sun and rain—gives no worries of expansion and contraction.

To see the many ways Transitop can help you in your construction—to see how easily it is erected, to learn of its economies—send for the illustrated brochure on J-M Asbestos Transitop—write Johns-Manville, Box 158, New York 16, N.Y. In Canada, Port Credit, Ontario.

The above H & B aluminum molding is one of several attachment systems that may be used with Transitop.

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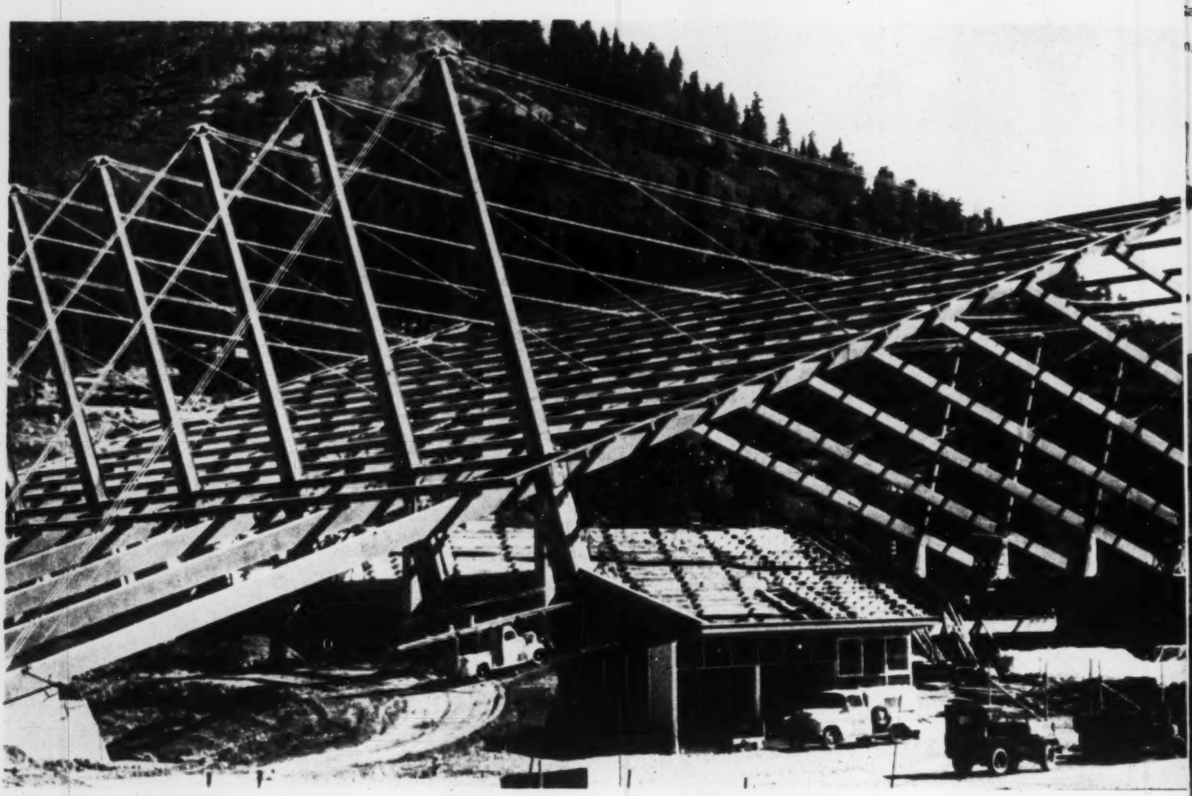
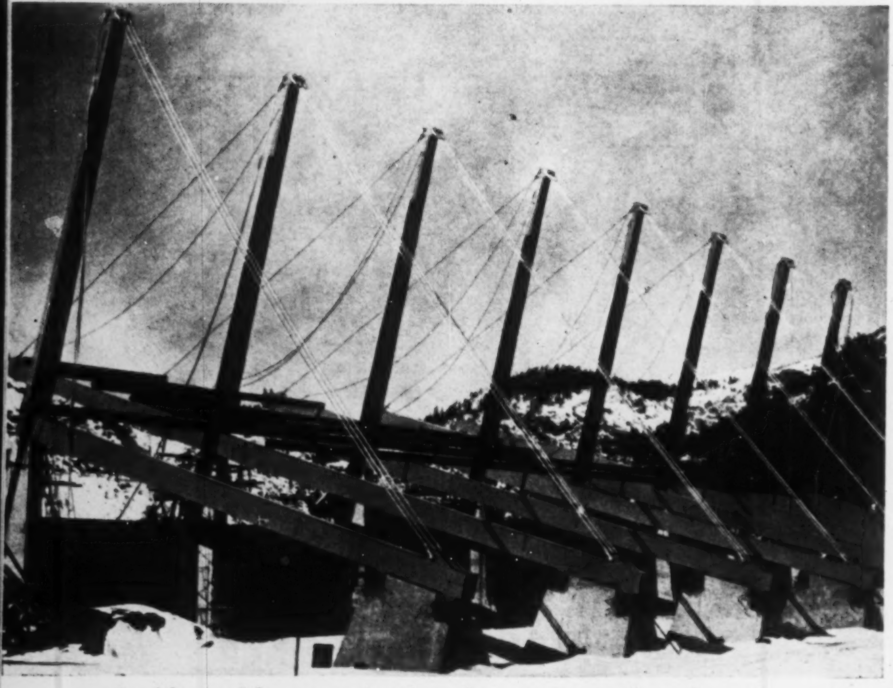


Two cantilevers form a wide-span roof for Olympic Games' skating rink.

Cable-Hung Olympic Roof Spans



Backleg cables were tensioned to prestress the columns.

A spectacular coliseum is being rushed to completion for the 1960 Winter Olympics at Squaw Valley in the California Sierra Nevada. The cable-supported arena roof has a 300-ft span.

The roof is actually two separate structures. It has only a nominal connection at midspan to provide watertightness and to assure equal deflection of the roof beams. With no load on the roof there is a 15-in. space between the ends of the beams. Under full load this space is closed.

The structure has eight bents, spaced 32 ft c-c. Each bent includes a pair of tapered steel box beams, each of which cantilevers a horizontal distance of 150 ft from 33½-ft-high piers. Similar tapered steel backleg members extend 79 ft outside the building from the piers.

And 60-ft-long columns that support the steel cables are mounted on the main piers.

Three 2¼-in.-dia cables connect each column top with its backleg. And three similar cables support each box beam, one cable being connected 61 ft from the pier and two attached 61 ft still farther out.

This roof system was adopted partly

300 Feet

to make the design reflect the spectacular setting and the spectacular nature of the event. But it is also as inexpensive a roof system as could be developed for the long span and heavy design live loads.

Snow load for a heavy winter is figured at 100 psf. Though a snow-melting system will be installed, the roof is designed for 50 psf, which is ample for any individual snow storm or mechanical failure.

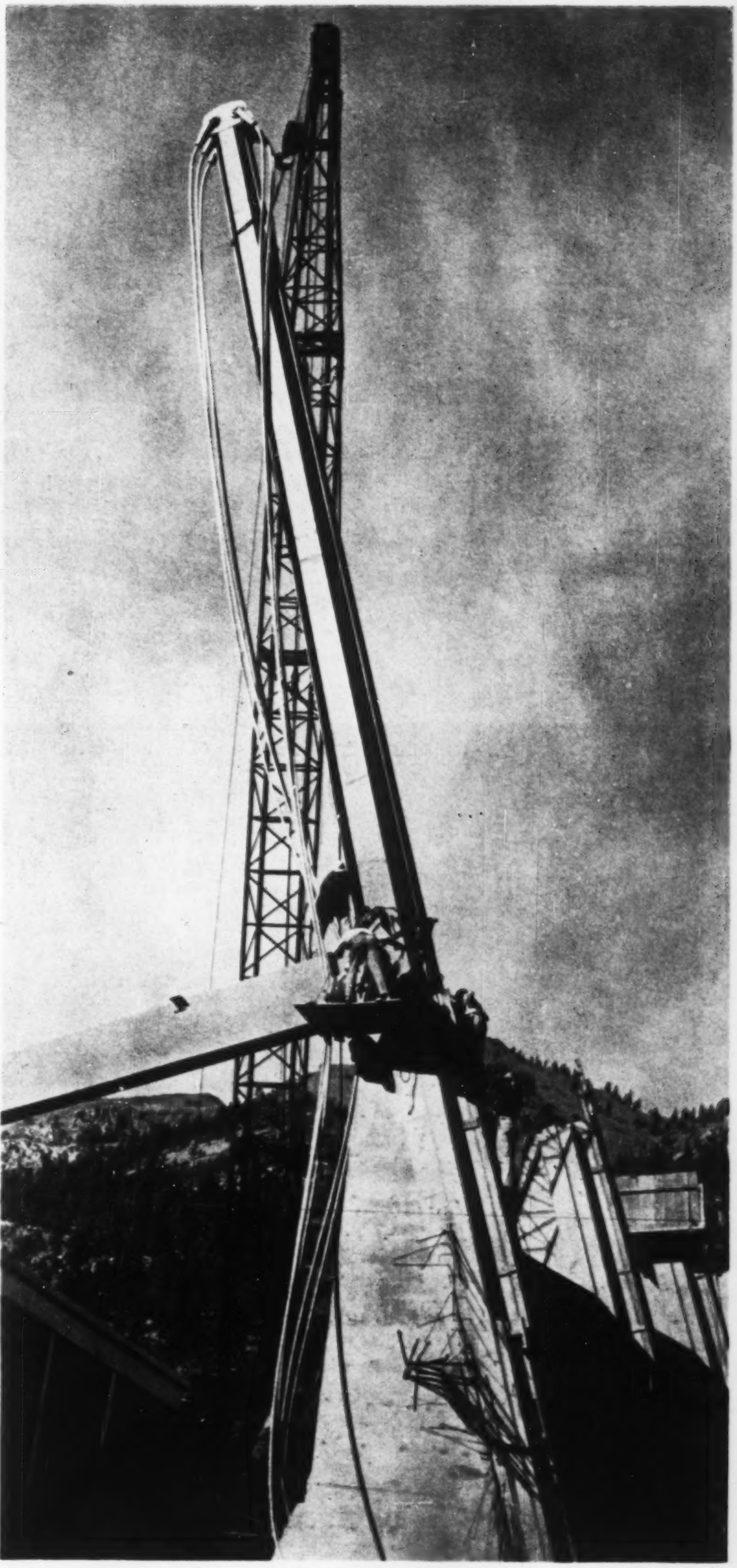
The structural system has the advantage of great depth, with some of the members located above the roof.

And it is much better for resisting unbalanced loadings than an arch would be.

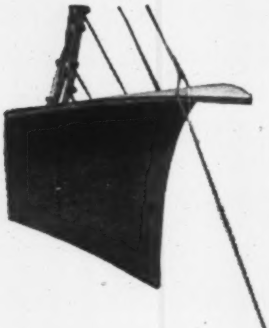
• Seats 8,000—The structure houses an ice rink that will be used for figure skating, hockey matches and ceremonies. The arena will seat 8,000 spectators. Cost is about $3.5 million.

It is completely open at one side, providing a view of some of the ski slopes and a 400-meter speed-skating rink.

The tapered beams in the roof are 2 ft wide and range from 3½ ft deep at the column pier to 2 ft deep at

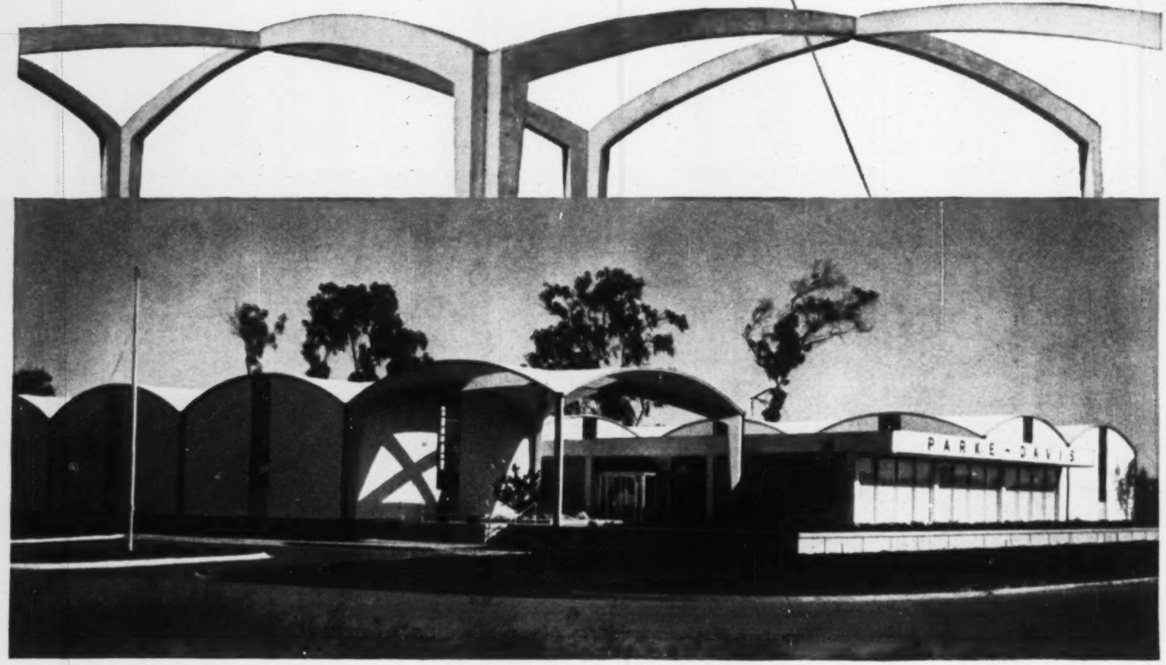


Columns were erected with roof cables attached to the top.



Parke-Davis building at Menlo Park . . .

jaunty "showcase" assembled from just 3 basic shapes in precast concrete



Beauty is good public relations, agreed officials of Parke, Davis & Company in planning this combination office and warehouse in a restricted industrial area in Menlo Park, Calif. To achieve this beauty, and fill practical needs as well, concrete was chosen for the whole job.

Shell-roof sections, L-shaped bents and wall panels were all precast, quickly and easily assembled on the job site. The results: a graceful, pleasing silhouette; the wide-open, fire-resistant interior specified; and a clean, modern look that suits a maker of pharmaceutical products.

Architects: Minoru Yamasaki & Assoc., Birmingham, Mich. Associate Architects: Knorr-Elliot Assoc., San Francisco, Calif. Structural Engineers: Amman & Whitney, New York City.

FOR STRUCTURES... MODERN concrete

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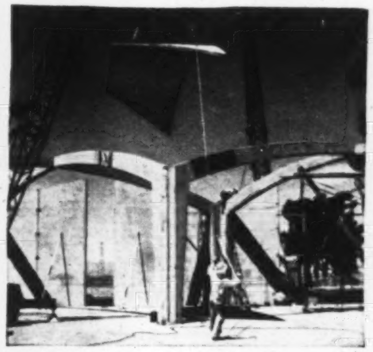


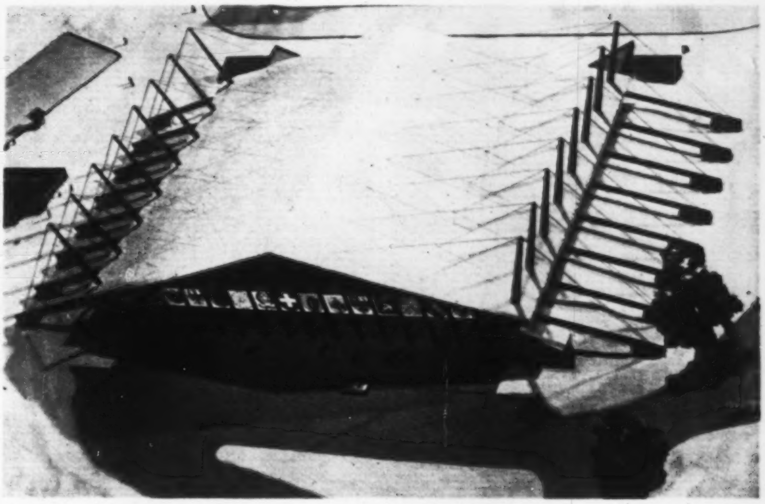
Concrete shell roofs are money-savers for wide spans

Thinner by far than an eggshell in thickness to span ratio, concrete shells give big material savings, low cost. Domes, barrels, folded plates, hyperbolic paraboloids are all shell forms that easily achieve large, unobstructed floor areas. Shells can be pierced for skylights, support heavy machinery suspended from them.

Precast concrete units cut on-the-job building time

For the Parke-Davis job, bents were stack-cast, locked together diagonally to form 40-ft. square bays. Lightweight concrete was used for the prestressed wall panels and for the shells. Multiple use was made of all forms.

For free literature *on shell construction (distributed only in U.S. and Canada) write to Portland Cement Association, Dept. A7-13, 33 West Grand Ave., Chicago 10, Illinois.*



FINISHED STRUCTURE includes a cellular steel roof deck through which waste heat from the refrigeration system will be circulated to melt snow.

the centerline of the structure. They are made of welded plates. Web plates are ½ in. thick and flange plates 1 in. thick at the pier and ⅞ in. thick at the centerline. The struts extending from the beams vary from 3½-ft depth down to 2¾ ft and include ⅝-in.-thick flange plates and ½-in. web plates.

The tapered columns, also made of welded plate, are in the form of crossed I-beams. Web material is ⅝-in. plate; flange material is ⅞-in. plate. Depth varies from 3½ ft at the pier to 2 ft at the tip. Flange width tapers from 21 in. down to 12 in.

• **Prestretched bridge strands**—The cables supporting the roof structure are all 2¼-in.-dia galvanized prestretched bridge strands. Each piece was fabricated to exact dimensions with no provisions for adjustment. [The structure thus differs from a TWA hangar at Philadelphia that had provision for adjusting cable tension (ENR Dec. 27, 1956, p. 39)]. This put a premium on accuracy of steel fabrication and erection. But the simple nature of the structure facilitated erection.

Prestretching the bridge strands makes them truly elastic by removing the inherent "constructional looseness." This permits measuring and marking under prescribed loads.

The strand has an ultimate strength of 205,000 psi and a yield strength of about 120,000 psi. Design working stress was about 60,000 psi. The cable size was actually made slightly larger than necessary for working stresses to limit the deflection of the relatively flexible roof structure.

The various structural elements were so calculated that a 100% excess live load (an increase from 50 to 100 psf) would not stress the members beyond the yield point.

This extra precaution was taken because of the unpredictable nature of the extremely heavy snows. There will be no cause for concern so long as the roof snow-melting system is functioning—this, of course, is an additional safety factor.

• **Erected by crane**—Steel elements of the roof were erected by a heavy crawler crane. Columns and backleg struts were erected first with cables already attached to the columns.

The three exterior bridge strands were connected between column tops and struts before the roof beams were erected. Length of these strands was calculated to prestress the columns by bending them away from the building centerline. This bending will be partly overcome by the addition of the main roof structure and will be completely overcome under full live load.

The roof beams were erected in two sections. First section spanning 61 ft horizontally is supported by a single bridge strand. The second section has two bridge strands supporting it 61 ft farther out. The beam sections were welded together after erection to form a continuous member.

There are no diagonal members in the roof structure. The steel roof decking is figured for diaphragm action to accommodate lateral forces.

The roof framing includes 16-in., 36-lb WF purlins at 11-ft centers. This supports a steel cellular deck with 4½-in.-deep sections, 6 in. c-c. The deck was custom-made to insure watertightness. It is fabricated of 16-ga metal for the bottom surface and 18-ga for the cells.

(*Turn the page*)

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. . . Olympic roof

The deck is placed with the flat side down.

The cells of the roof deck serve as ducts for the snow-melting system. In this connection, it was considered to be far cheaper to design the structure for 50-psf live load and install a snow-melting system than to design for 100-psf live load. Actually, the snow melting system uses heat from the ice rink refrigeration system that might otherwise be wasted.

The buttressed column piers are 33½ ft high and are connected by a 21-ft-high retaining wall. Space above the retaining wall is glazed with steel sash.

• **Pile supported**—The floor of Squaw Valley is an alluvial fill on a glacier-excavated valley. It contains silt pockets of uncertain extent. This necessitated use of pile supports under the piers. The piles were driven to a predetermined depth of 40 ft. All piles are step-tapered steel shells filled with concrete.

Eight piles are needed under each column pier. And there are five piles under anchor piers. The outside clusters of four piles under the anchor piers are designed for uplift and incorporate tensile reinforcement.

As can be seen, the roof structure is extremely flexible. This required a special connection at the peak to make sure that each half of the building would have equal deflection even under unbalanced load. And it also required a roof flashing detail that would permit complete closure of the 15-in. gap between beams and yet guarantee watertightness of the roof.

The flexible nature of the structure also presented problems in connection with the wall along the north side of the structure. This wall is almost all glass. It had to be supported at the top by the end bent. Yet the bent had to be free to move.

Result: Mullions for the glass wall are connected to the roof beam by linkages. One end of each linkage is pinned to its mullion and the other end slides in a slotted plate on the roof beam permitting movement of the roof of as much as 2 ft.

Construction of the arena was financed by a federal grant. The federal government will lease the coliseum to the California Olympic Commission.

The building was designed by Corlett & Spackman and Kitchen & Hunt, Architects Associated. Structural engineers are the firms of H. J. Brunnier and John M. Sardis. Design was supervised by Charles D. De Maria of the Brunnier firm. General contractor is Diversified Builders Inc., Paramount, Calif. Steel fabricator is Pittsburgh-DeMoines Steel Co.

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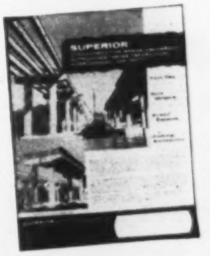

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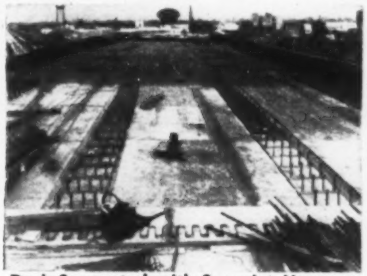
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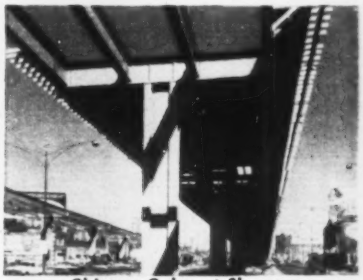
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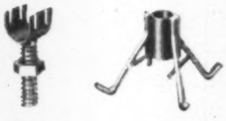
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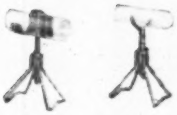
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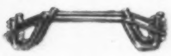
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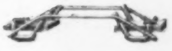
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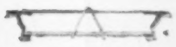
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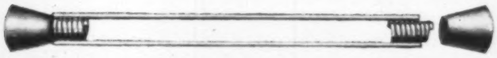
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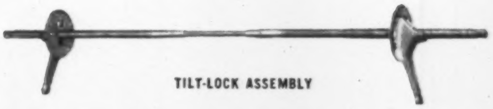
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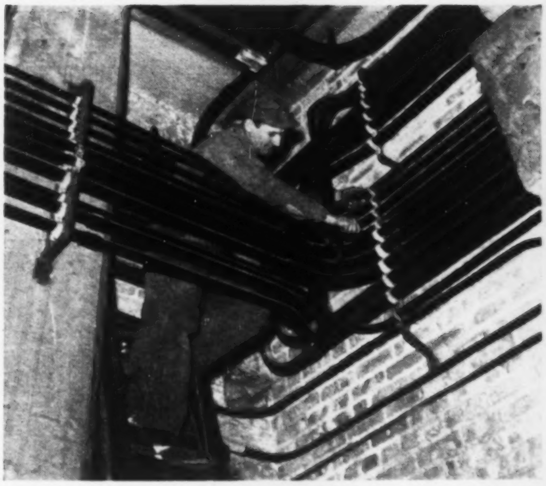

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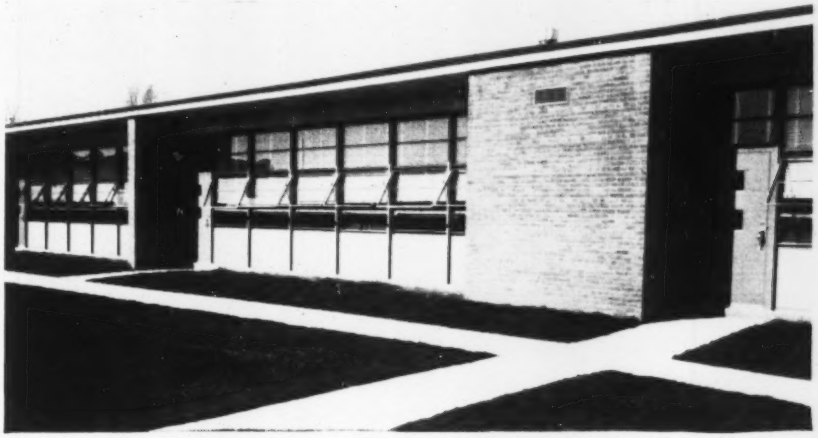

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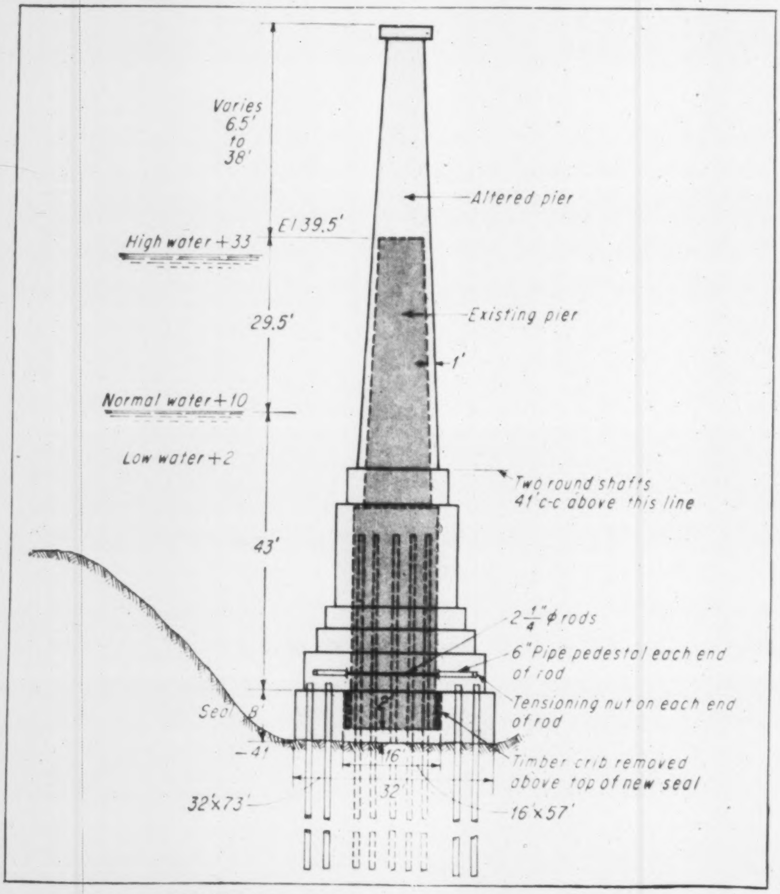
Old bridge needed more clearance, so spans were raised and piers rebuilt.

Old Bridge Steps Up Onto Raised


Varies 6.5' to 38'
Altered pier
El 39.5'
High water +33
29.5'
Existing pier
1'
Normal water +10
Low water +2
Two round shafts 41' c-c above this line
43'
2 1/4" ϕ rods
6" Pipe pedestal each end of rod
Tensioning nut on each end of rod
Seal 8'
−41
16'
32'
Timber crib removed above top of new seal
32'×73'
16'×57'

More piles and added concrete increase clearance

Strengthening and raising the piers of a 40-year-old bridge without removing the steel superstructure can present some interesting problems. That's what General Construction Co. found out when it tackled the Interstate bridge across the Columbia River between Portland, Ore., and Vancouver, Wash.

Major steps in the work included driving underwater piles, casting a tremie-concrete seal beneath the existing pier concrete, drilling through the old concrete to place prestressing rods that will bond old and new concrete, and—finally—casting the necessary concrete to thicken and raise the piers.

Last year a new bridge paralleling the 40-year-old existing bridge was completed and opened to traffic. It is similar to the old bridge, including a lift span and a number of 265-ft truss spans. But the new bridge has a single 531-ft truss span in place of two of the shorter spans. And it has greater clearance.

General's work will make the geometry of the old bridge conform to that of the new bridge. Thus, two spans are being removed and replaced by a longer span. And several of the piers are being rebuilt to permit raising the

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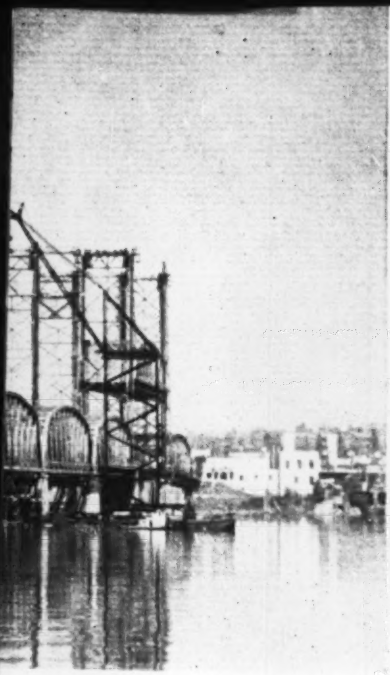
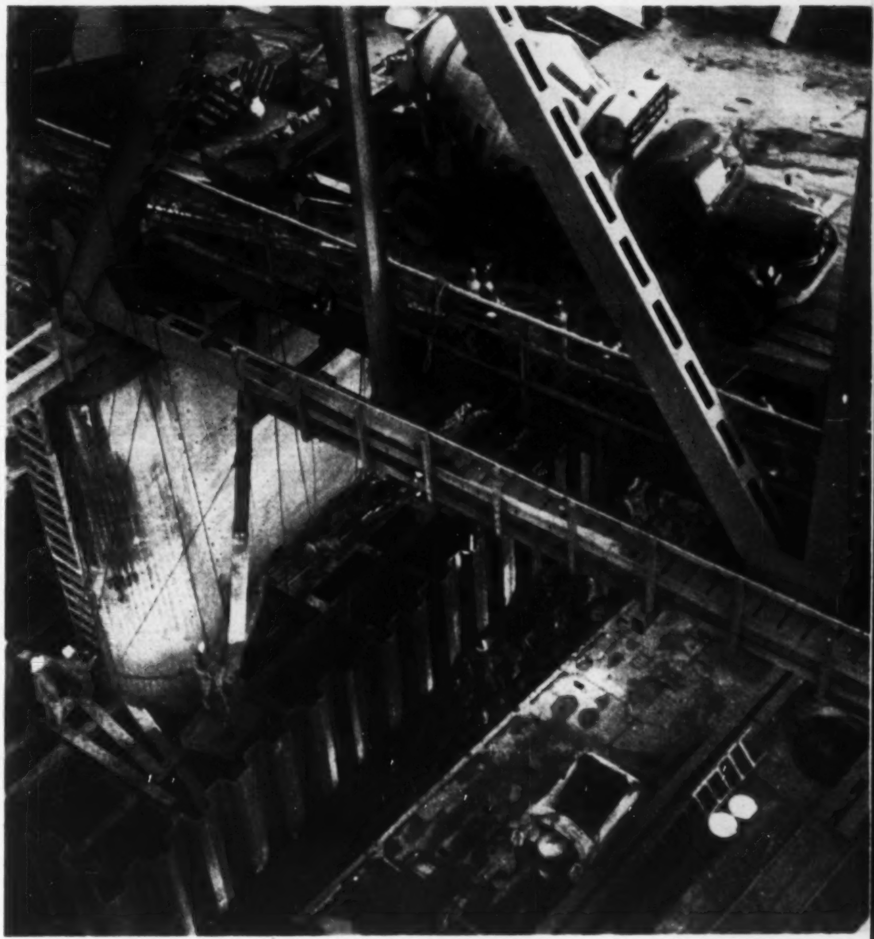
By A. J. Johannesen, *project engineer for General Construction Co. on this bridge reconstruction job. Mr. Johannesen has served in a similar capacity on other Pacific Northwest bridge and waterfront jobs. He was previously a field engineer at Hungry Horse Dam.*





Tremie concrete for pier seal is poured from truck mixer on deck

Piers

-existing steel trusses. The height increase varies from 6½ to 38 ft. When the current work is completed, each bridge will carry one-way traffic.

The bridge reconstruction will divert about 90% of the river traffic from the vertical lift span and relieve a serious bottleneck on a major highway—part of the Interstate system. The bridge is being raised so that it will have a hump in its 14-span, three-quarter-mile length.

The two piers adjacent to the new 531-ft span involved the most revisions. Three piers just south of that span are also being rebuilt. Other piers have minor modifications only.

Instead of the usual pier construction sequence, it was possible to do all excavation and drive wood foundation piles before installing the cofferdam.

Untreated wood piles were driven in two rows around the existing piers. On each of the two larger piers adjacent to the 531-ft span, 108 new foundation piles were needed. On each of the other three piers being rebuilt, 64 piles were used.

This piledriving work required a driver that would install the 60-ft piles 35 ft below the river surface. Yet the driver had to clear the river bottom, which is about 20 ft below water surface elsewhere in the river. And the driver also had to clear the bridge superstructure about 35 ft above water. Result was a barge-mounted driver that had 70-ft-long, hinged steel leads, with half of the leads projecting above water.

The cofferdam was placed after foundation piles were driven. The strut-and-wale framework was hung from the steel bridge superstructure by cables. Then the sheetpiling was driven.

Excavation had gone 2 ft below the existing pier. And there was no serious infill during piledriving operations—the river was not carrying much silt during that period.

An 8-ft-thick, tremie-concrete plug was cast inside the cofferdam. The concrete seal flowed into the 2-ft space beneath the existing pier. This gained the weight of the old pier against uplift, which considerably reduced the necessary thickness of seal concrete. The tremie seal filled the entire cofferdam area and required no forming.

Once the tremie seal was in and the cofferdam pumped out, the wood piles were cut off. Then drilling operations for the prestressing rods were undertaken.

The existing piers were 16x57 ft in plan. They had been cast in a crib formed by 12x12 timbers, and had two circular shafts above water. The timber crib was encased in the tremie-seal pour but was removed for pours above the seal. Removal of the timber crib reduced pier thickness to 14 ft.

Holes, 4 in. in diameter, were drilled through the old concrete to receive the prestressing rods. There was no trouble in drilling through the concrete with a diamond bit. But the bit shredded the old wood piles and became gummed up. It then became necessary to use an extremely coarse carbide bit for the wood.

After the holes were drilled, 2½-in.-dia rods were inserted so that they extended 6 ft on each side of the existing pier. Pipe pedestals were slipped over the rods.

Then the rods were tensioned by nuts bearing against washers that bore against the pedestals. Once the rods were prestressed, they were grouted and the piers were ready for concreting.

Seven of these tension rod assemblies were needed for the three smaller pier reconstruction jobs. On the piers adjacent to the new 531-ft span, 12 such assemblies were required.

Once the prestressing rods were in,

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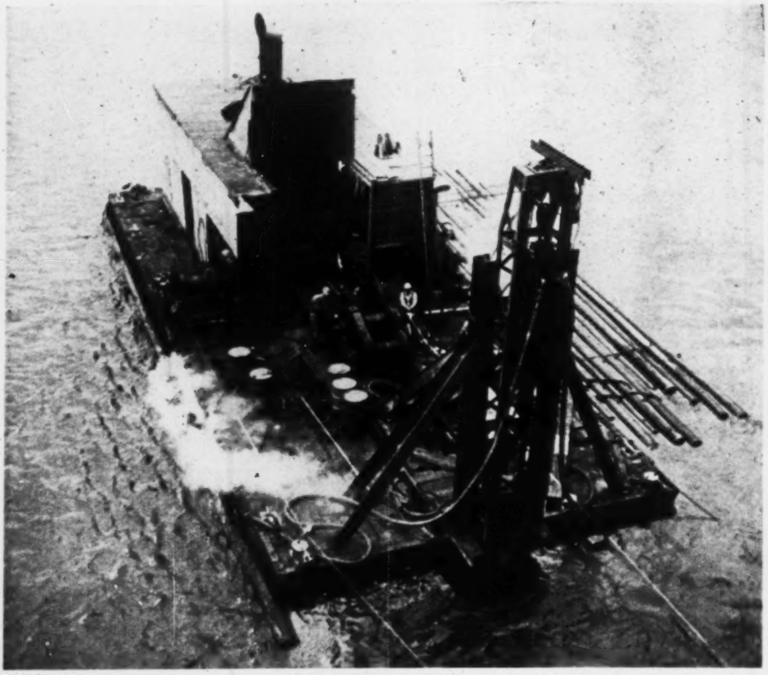
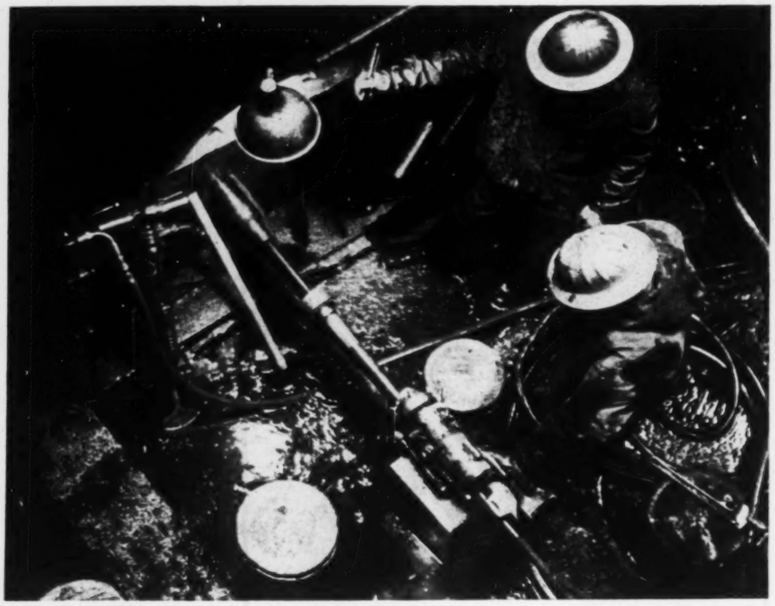


FLOATING PILEDRIVER has hinged leads extending 40 ft below water. Wood piles had to be placed some 35 ft under water.

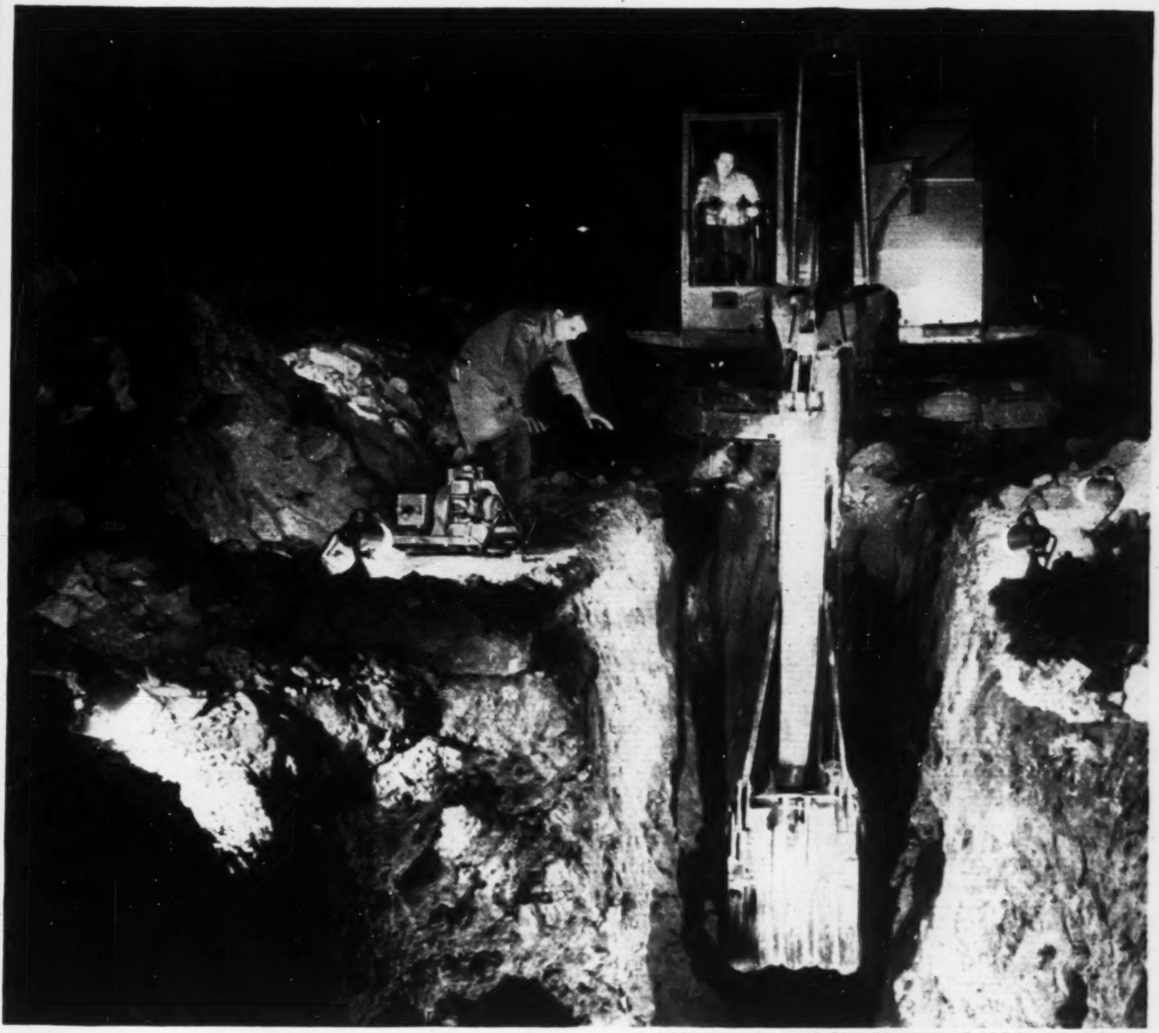


DRILL BORES 4-in. hole through old pier concrete for prestressed rods. Wood pile tops extend through tremie seal.

the piers were built up pyramid fashion to water level. Above water an additional concrete thickness of 1 ft was added to the existing circular piers.

The rods actually do not prestress the new pier concrete. They are really large dowels intended to make the old and new concrete work together.

The Interstate bridge is a joint operation of the Oregon and Washington highway departments and the Washington Toll Bridge Authority. Construction is supervised by the Oregon State Highway Department with A. A. Rear resident engineer. T. R. Harris is general superintendent for General Construction Co. on the reconstruction work.



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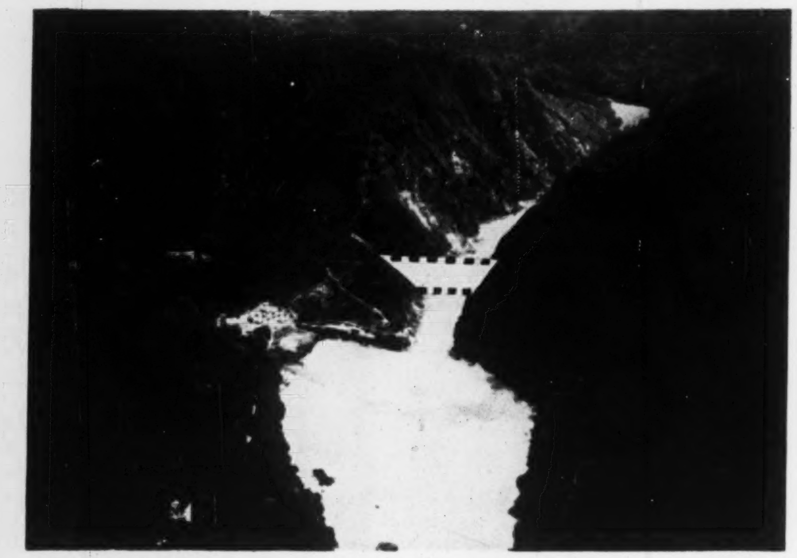

DAM ON THE KOUILOU RIVER would be located in a gorge. Development of a construction camp (clearing at left) has already begun.

African Hydro Project Proposed

The new Republic of Congo is trying to find financing for a dam and 1-million kilowatt hydro plant on the Kouilou River, which empties into the Atlantic Ocean about 100 miles north of the mouth of the Congo River on Africa's west coast.

The project is under the planning direction of the French government's power agency, Electricite de France. Design is almost complete.

Because of ample water, a huge reservoir area and a rocky gorge site for the dam, it is claimed that power can be developed for one-fifth of the kilowatt cost in Europe. In this respect the project rivals the Inga Falls site on the Congo River, where the Belgian government and an industrial consortium of European and American firms is studying a hydro plant with the tremendous potential of 25 million kilowatts (ENR July 18, 1957, p. 62).

As planned, Sounda Dam (named for the gorge in which it would be located) would be a 380-ft-high concrete arch, 1,000 ft long. The power plant, containing five 200,000 kw generators, would be located at the foot of the dam. The proposed reservoir would have a capacity of two million acre-feet.

Aside from the government of the Republic of Congo and Electricite de France, a principal promoter of the project is the Chamber of Commerce, Agriculture and Industry of Kouilou-Niari, with headquarters in Pointe Noire, the port city of the country. Pointe Noire can now handle a million tons of shipping a year with its present facilities. The city hopes to develop industry around an enlarged harbor. This would provide a market for Kouilou power, which would be generated only 60 miles away and brought in on two 380 kv transmission lines. At present the population of Pointe Noire consists of 54,000 Africans and 3,000 Europeans.

As with the Inga Falls project on the Congo, a consortium of industrial companies has been investigating the possibilities of utilizing Kouilou power for the production of aluminum, ferromanganese, ferrosilicon, silicon carbide, phosphorous and other materials.

This industrial group has formed the Kouilou Hydro Electric Co. for the purpose of financing both the hydro and industrial installations. It has already begun preliminary work at the dam site, including construction of workers' quarters. Among the companies listed as members of Kouilou Hydro are Aluminium Ltd. of Canada and Olin Mathieson of the U.S.

It is estimated that the dam and hydro plant would cost about $100 million, that the industrial plant and housing envisioned for Pointe Noire might involve an ultimate investment of $250 million and that the necessary appurtenant public works (an enlarged harbor, schools, sanitary facilities, etc., in Pointe Noire and an 80-mile access road to the dam) would add another $25 million.

The French authorities have agreed to provide the public works, and the road to the dam is now practically complete. These government authorities would also contribute substantially to the cost of the dam and power plant. The rest of the cost of the hydro facilities and all of the cost of the industrial installations would be provided by private investment.

US Resumes Aid to UAR With $8-Million Advance

With the signing of a new technical assistance agreement between the United Arab Republic and the U.S., the loose ends left from the Suez Canal crisis are about gathered in.

It is estimated that under the new agreement the U.S. will advance the equivalent of about $8 million. Included will be a $1-million advance by the Development Loan Fund to a private company for a woolen mill near Damascus, and the training of about 30 Egyptian students in the U.S.

American aid was actually resumed last year when the U.S. gave the U.A.R. nearly $50 million worth of wheat, tobacco, barley and vegetable oils. Within the past few months the U.S. has released some $6 million in frozen development funds.

These moves, added to the fact that U.S. dredges have been rented to work on the canal and that the U.A.R. is considering applying for a World Bank loan to help finance the canal widening work, give President Nasser's country more of a Western orientation than it has had for some years.

At the same time, the U.A.R.'s relations with the Soviet Union remain fully in force. The Russians are firmly entrenched for the job of handling the first stage of the Aswan High Dam construction, and they have extended a $175-million credit for industrialization.

British to Spend Heavily To Expand Water Supply

British public water agencies will lay out about $100 million a year in capital expenditures between now and 1965, according to a study by the Central Advisory Water Committee.

This will add about 800 million gallons a day to the water supply. Britain now consumes about 3,600 million gallons a day and expects demand to increase at about 2.3% a year.

Demolishing this structure would seem simple, but it's . . .

Almost Too Hot to Handle

Mexico City's General Hospital has a "hot" engineering problem.

Eight years ago, someone mistakenly placed an unprotected gram of radium in an ordinary office safe in the building's new wing.

Shortly thereafter the wing was found to be improperly constructed. It was closed, the vial of radium forgotten.

For eight years the radium gave off highly dangerous radon gas. (The gas becomes a solid in the air and falls as dangerous particles with a life of some 1,500 years.) The entire wing became radioactive. Corn, vegetables and flowers growing alongside the "hot" room shot to enormous sizes—the corn grew some 17 ft.

Then the radioactivity was discovered. Mexico City's National Atomic Energy Commission quickly stepped in to plan the decontamination and possible destruction of the one story wing (ENR June 4, p. 17).

The problems now facing some Mexico City demolition contractor:

- Get to and remove one gram of unprotected radium.
- Take out all radioactive rubbish.
- Tear down walls, windows and other contaminated materials.

• How it will be done—Fortunately, the wing is relatively isolated from the rest of the hospital. Geiger tests show little radiation in drains and in the garden.

The first engineering job is to remove the hottest particles from the room. Until the radium is removed it cannot be estimated just how hot surrounding materials are. Needles on the radioactive meter counters now fly up to maximum within 15 ft of the office safe.

Engineers plan to build a lead receptacle for the radium. The atomic waste basket will weigh 1½ to 2 tons. It will be mounted on a cart with rollers. A lead wall with a viewing window will be mounted on another set of rollers. An operator will push the receptacle into the room from behind a shield.

Then a contrivance of mechanical arms, operating from the shield, will open the safe door (left unlocked), take out the bromide radium flask and put it into the receptacle, sealing it with a lead top. After the radium bromide is taken out on the rollers, engineers wearing special suits and lead-lined gloves can safely enter the room to remove the pieces of contaminated glass.

Then another count will be made to determine how much of the room will have to be torn down. It may even prove cheaper to demolish the whole wing and start all over again.

Construction men and other technicians involved with the demolition will use pocket docimeters, which ring an alarm when the operator reaches radioactive tolerance.

• Affect on materials—All radioactive materials—glass, the safe itself, and other metals—will be put in a big, lead container. Later, all materials will be carefully analyzed to see just what damage the long years of radiation have done.

One AEC engineer salvaged some pieces of glass and a piece of a tin-lined electric wire insulation. Radiation had altered the structure of the crystal in the glass. It crumbled on touch, the engineer said.

The piece of insulation was found to have "radio-active measle" spots.

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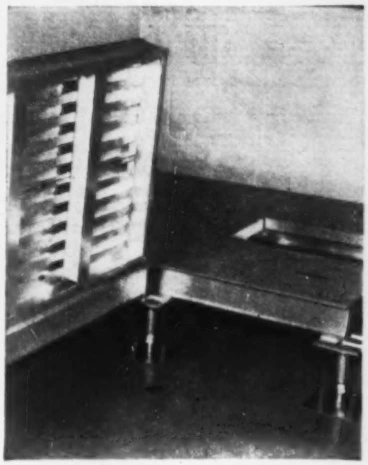

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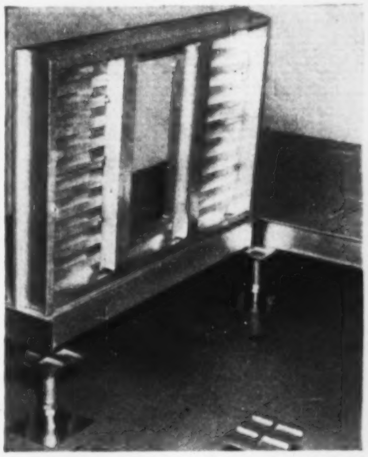

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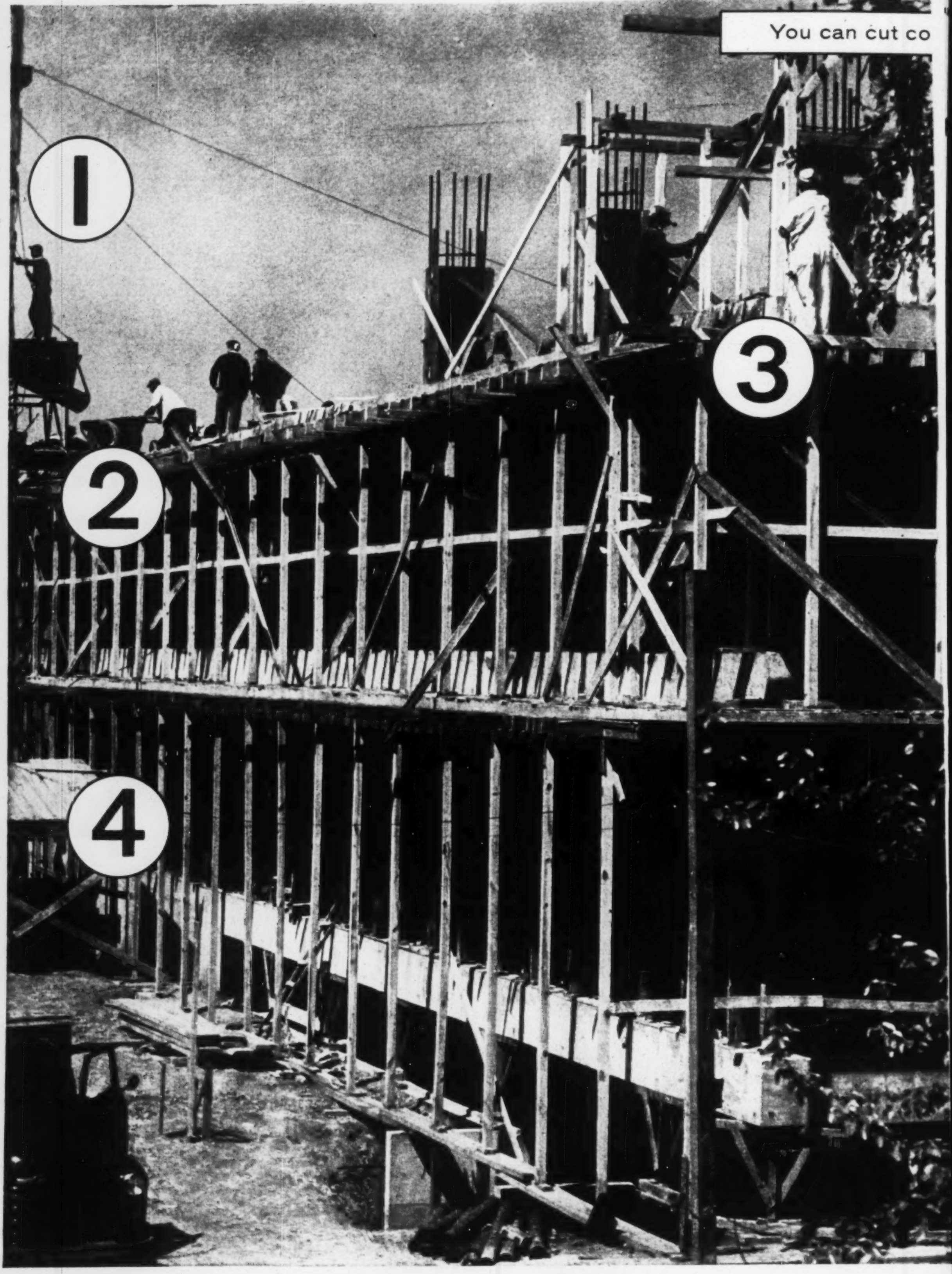
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➋ Unbraced struts collapsed
➌ Workman fell off structure
➍ Equipment fell from elevation

In the construction of a building, any experienced contractor goes through the concrete pouring phase as a matter of course. But because this operation is treated so routinely, it's easy to overlook hazards which could mean loss of man hours—and profits.

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news and notes from the field

CRACKS IN CONCRETE: *why they occur—how to control them*

Cracking is one of the most misunderstood problems in concreting, and is generally regarded as a sign of defective concrete. On the contrary, most cracking is the result of improper construction practices and can be controlled by simple precautions.

Like other construction materials, concrete contracts and expands under various conditions of moisture and/or temperature. This normal movement should be anticipated and provision made for it in the design, placement and curing of concrete, otherwise cracks may result.

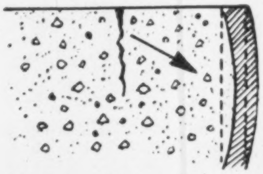
Generally, most cracking is caused by stresses exerted in or on new concrete while it is still "green"—before it has gained sufficient strength to resist such forces. A majority of cracks occur during the first few days after concrete is placed. As a rule, most cracks result from:

• Shifting of concrete before it hardens
• Shrinkage and expansion of concrete before and after hardening.

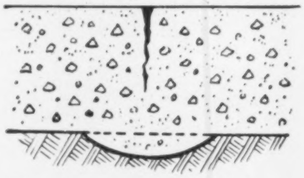
Shifting Before Hardening

This condition can cause cracks that are extremely difficult to diagnose. See Figures A, B and C. These cracks are caused by forces resulting from improper construction practices such as:

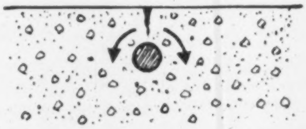
• Unstable forms • Unstable subgrade (uncompacted, frozen, muddy) • Subbase paper rupturing on uneven subgrade • Jarring of unstable ground • Improper placement of reinforcement (too close to surface).



A Bulging or shifting of forms due to timber expansion, loosening of nails or clamps; weak form construction, etc., can cause cracks having no particular pattern. Concrete surface distortion is usually the sign of form shifting.



B Subgrade paper rupture or poor subgrade allowing concrete to shift while setting can cause cracking as shown above.

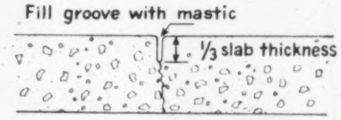


C When concrete settles over obstructions such as reinforcing steel, cracks may occur. This cracking can be prevented by using low-slump concrete and stable subgrade or good footings on good solid ground.

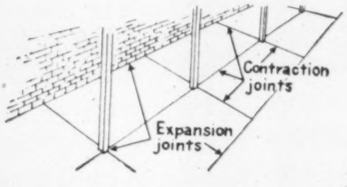
Shrinkage and Expansion

While concrete is plastic or fresh, it occupies its largest volume. When dry, cold and completely carbonated, it has its smallest volume. Varying conditions of moisture, temperature and age between these extremes cause concrete to shrink and expand slightly. Unless provision is made for these normal volume changes, and good concreting rules are observed, cracks may result. Shrinkage during hardening and drying can be greatly reduced by using as little mixing water as possible, dampening the subgrade and forms, and curing the concrete properly.

Shrinkage cracks can be prevented or effectively controlled by contraction and expansion joints, and use of low slump concrete.



D Contraction joints should be placed at points of stress concentration so that in case of shrinkage, cracking will occur neatly beneath the joint as shown in Fig. D. They can be neatly finished so final appearance of the structure is not marred. In sidewalks, place joints at 5′ or 6′ intervals. In driveways, place them at 15′ to 20′ intervals. In large floors, place joints at 15′ to 20′ intervals. In buildings divided into bays by columns, place joints where shown in Fig. E, but seldom over 20′ apart unless adequate steel is used. Cracks in solid concrete walls are minimized by using low slump concrete. Narrow feathering of concrete sections should be avoided to prevent cracking.

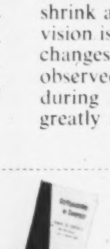


E Expansion joints should be placed at junctions of walks with driveways, buildings, curbs, light standards; where a floor joins a column base, stairway, etc., or anywhere else that concrete freedom of movement may be restricted.

Joints cannot be expected to prevent or fully control situations such as:

• Dry subgrade • Drying due to weather immediately after finishing • Carbonation in initial stages of curing • Lack of protection from low humidity atmosphere.

For more information on causes and control of cracking, ask your Alpha representative or write for the Craftsmanship in Concrete folder: "Cracks in Concrete".



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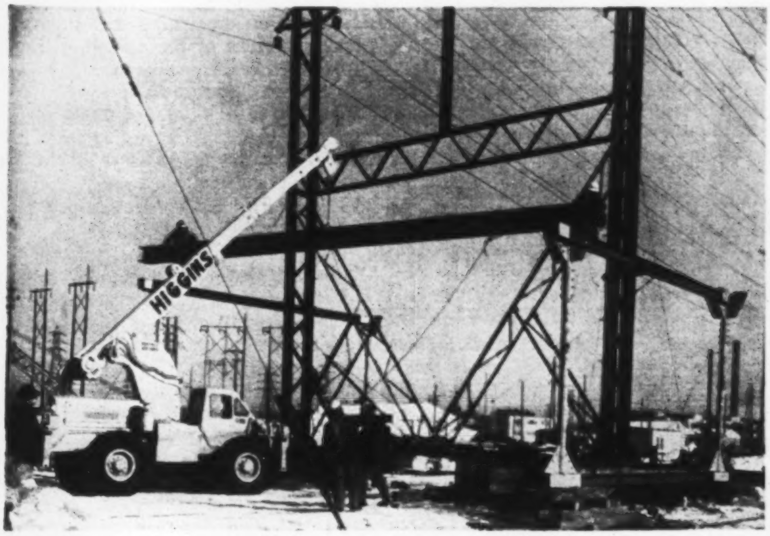
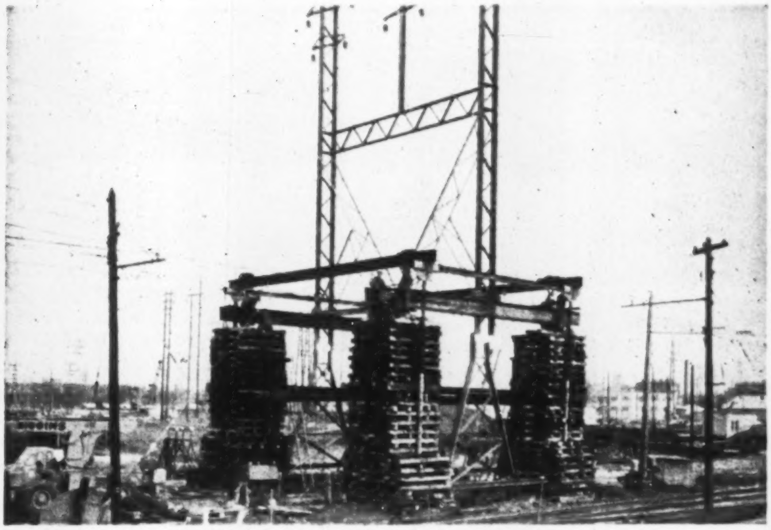


Tower Gets Frame Support . . .



. . . For A Big Lifting Job

Raising an 85-ft-high transmission tower another 23 ft was one of the tough jobs in the relocation of an 86-mile network of power lines at Niagara Falls, N. Y.

The tower had to be raised to allow blasting and excavating operations for the twin water conduits of the Niagara Power project to cross safely under the wires. And the job had to be done without interrupting the flow of power through the six strands.

Before raising began, new concrete footings for the higher tower were placed in 60-in.-dia caissons reaching 22 ft down to bedrock. The tower was prepared for lifting by bolting to the base of each leg two 24 in. I-beams, 36 ft long. The beams were placed parallel to the direction of the wires.

A steel frame was then placed around the tower and supported on adjustable, 10 in. dia posts. Four 16-ton capacity chain hoists, suspended from the steel frame, were hooked to the ends of the I-beams to lift the tower.

The tower was gradually raised and shored with railroad ties. As the job progressed, the adjustable posts were extended to keep the chainfalls above

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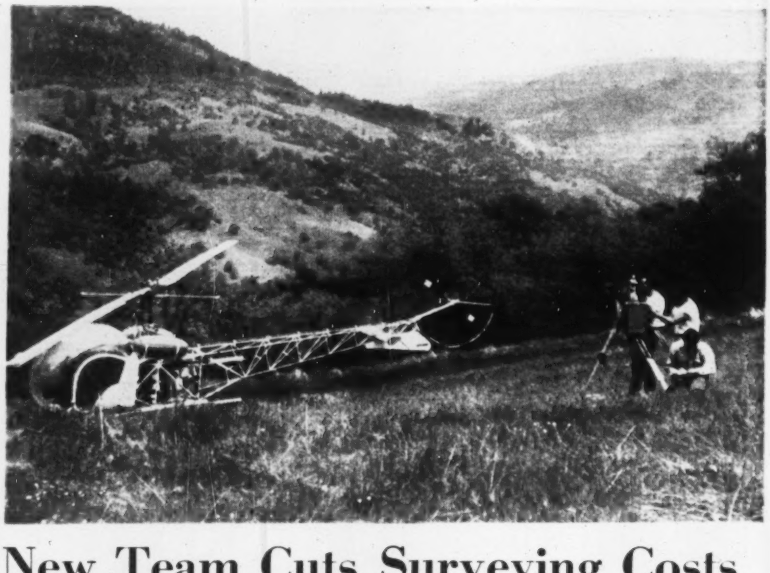
the I-beams. When fully extended the posts were also shored with ties to gain height.

Halfway through the job, 36-ft-long wood beams were placed to stabilize the tie shorings at each corner. After each day's operation, guy wires were secured in order to forestall any shifting of the ties.

A 24-ft sag in the transmission lines between adjoining towers on each side gave enough leeway to get the tower up to the needed height. A soft copper wire, used when the lines were installed 30 years ago, accounted for the sag. Towers are spaced 450 ft apart.

At the start of the operation insulators on the six circuits were loosened on the two towers to either side. Tension downpull at the beginning of lifting was between 60 and 70 tons and increased to about 120 tons at the finish. When the tower was raised A-frame legs were bolted in place and new reinforcing braces were installed.

W. Higgins and Sons, Buffalo, performed the raising operation. Buffalo Electric Co. and Patterson-Emerson-Comstock, Inc., were general contractors for the network relocation.



New Team Cuts Surveying Costs

California's Department of Water Resources has teamed a helicopter and microwave distance-measuring equipment to cut the costs of surveys for mapping in inaccessible areas.

Using a Tellurometer, an electronic device that measures distances directly by means of micro waves, the department's engineers were able to establish control points in areas where narrow canyons did not permit normal triangulation.

The helicopter was used to hop between control stations with men and equipment. Previous trips had to be made with pack animals.

In operations in Mendocino County, the survey team measured 116 lines with the Tellurometer system. Lines were as short as one-third mile; as long as 12 miles. The work was carried out in rugged country on various forks of the Eel River for six proposed dam and reservoir sites.

Crews were able to complete in a few weeks work that would have taken several months by normal tape and transit methods.

Using the Tellurometer, but without helicopter, it was estimated the surveys conducted by ground travel would require eight party months to complete. The same work was accomplished in two and one half party months by helicopter travel, for an estimated $3,500 less than the cost of using pack animals.

Apart from the helicopter, use of the Tellurometer is expected to result in savings of about 50% compared to the usual tape and transit methods. Final cost comparisons have not yet been made.

The helicopter flights were made using a model 47 G-2 Bell helicopter, adequate to land and take off at elevations of 6,800 feet with a pay load of 500 pounds for a one and one-half hour flight.

Work was carried out under the direction of Carl King, head of the maps and surveys section of the division of resources planning.

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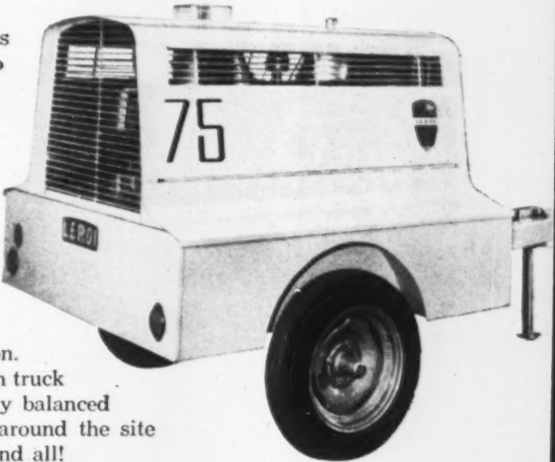

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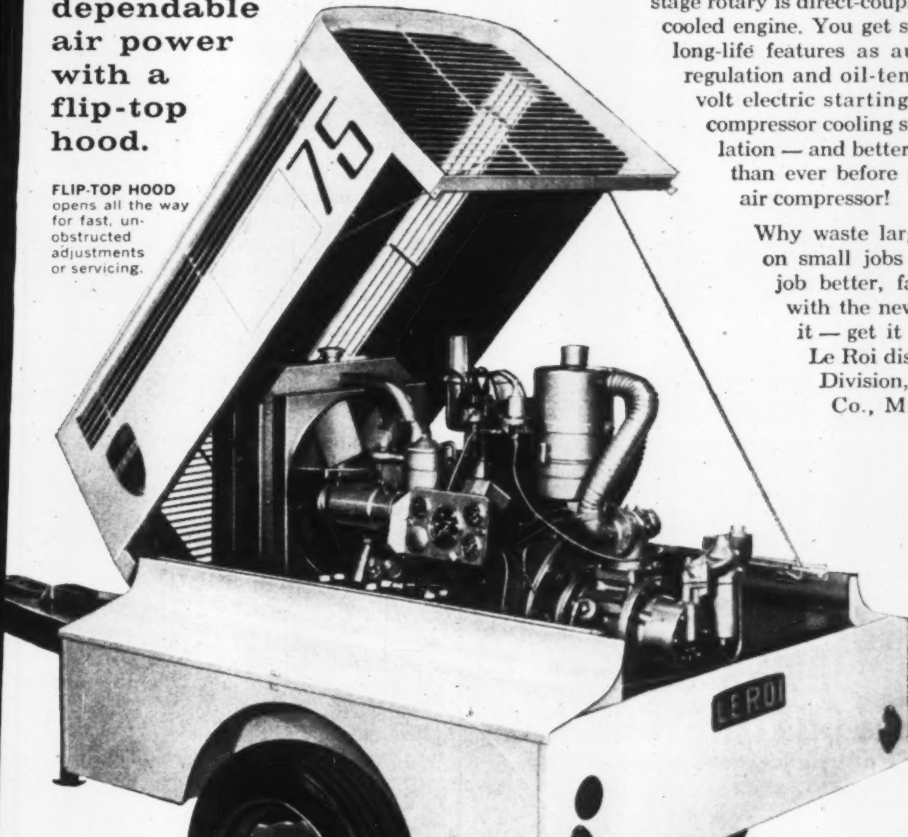

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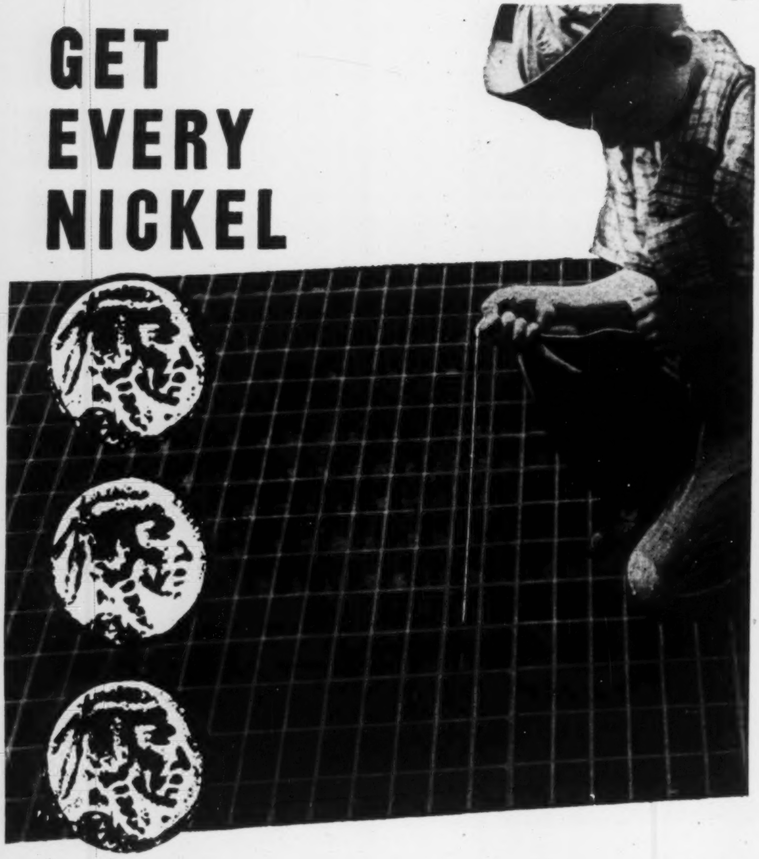

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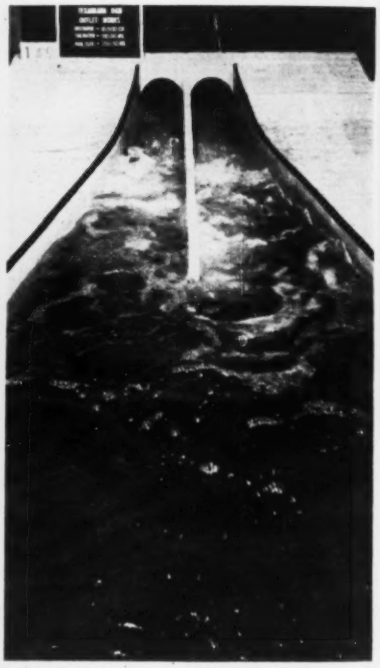


Study of this model resulted in . . .

Model Studies

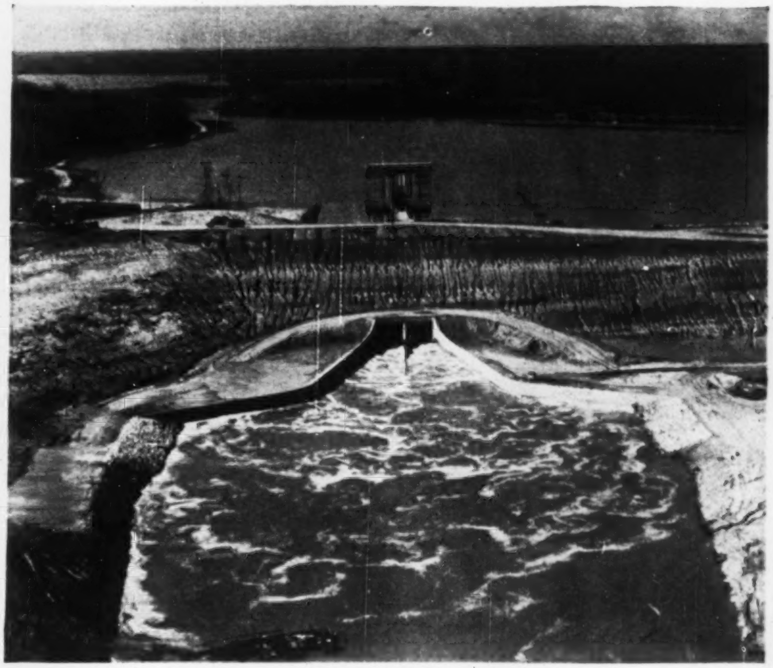
Model studies have proved a valuable tool in hydraulics research aimed at improving performance of construction materials and methods, saving design money and reducing construction costs.

Engineers at the U. S. Waterways Experiment Station, Vicksburg, Miss., say models enable them to check, improve or develop satisfactory designs that will accomplish the desired end in the prototype. The hydraulic model predetermines the adequacy of regulating works and points, through practical experiments, to corrective measures necessary for best design.

Several such studies were described recently by Col. Edmund H. Lang, director of the station, before a meeting of the Western Society of Engineers in Chicago.

A notable example was the model study for the recently completed Texarkana Dam on the Sulphur River in northeastern Texas (photos above). There, as a result of the studies, a much more efficient stilling basin than originally proposed was devised for the final design.

• **Wave action models**—An important phase of research conducted at the sta-



a more efficient stilling basin at Texarkana dam.

Improve Hydraulics Design

tion is the study of wave action models. The latest one, covering the Duluth-Superior harbor in Lake Superior, was conducted to determine the wave action and to develop effective remedies for navigation and docking hazards.

When severe wave action occurs during storms, navigation to and from the harbor becomes difficult, hazardous and time-consuming.

The most feasible remedy tested was detached rubble-mound breakwater. The outer limits of this breakwater were fixed after conferences with ship captains familiar with navigation in that area.

The breakwater will reduce hazards of entry to the harbor to acceptable standards, and waves at the dock area will not exceed 3 ft during the most severe storms. The waves have been as high as 8 ft in the past.

• **Savannah River silting**—Another type of research study currently under way concerns alleviation of silting in the Savannah River estuary on the Atlantic Coast.

As the Savannah flows into the ocean, fresh and salt water begin to mix. The silt-laden fresh water drops its silt load because of the reduced velocity and the precipitating effect of salt water. This causes shoals to form in the navigation channels. The dredging required as a result costs millions of dollars annually.

To solve this perplexing problem a model was built to include the Savannah River, its flood basin and the Atlantic Ocean adjacent to the harbor entrance.

The model studies have resulted in a promising plan for diverting the silt-laden fresh water to the ocean by a separate route. With the diversion in operation, the silt would be deposited in the diversion channel—and the river would remain clear and free from shoals. Studies of this problem are continuing to determine the best solution.

Colonel Lang says model studies conducted at the station over the last 25 years have resulted in construction savings many times greater than the cost of the tests.

The colonel expects the station to complete over 200 reports on research projects this year, compared with 140 last year. The station's major fields of research are hydraulics, soils, portland cement concrete (exclusive of airfield runways), and bituminous concrete runways for airfields.

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Tough Steel Ups Payload 15%

The use of T-1 steel and new design are cited as boosting payload, durability and operating efficiency of the PR619, 25-ton rear dump.

The tough steel is used to trim deadweight, raising the payload by 15%, the manufacturer states. The hauling machine is said to carry 20 cu yd heaped on a 2:1 slope.

Turns of 90 deg can be made by the PR619. Flared body top makes a bigger loading target; spill deflectors retain the load. The reinforced cellular floor has spacer bars welded between upper and lower floor plates.

Self-aligning, fast-acting hoists are said to provide a 12-sec dumping and a 57-deg dump angle off the lip.

Speed of the rear dump is rated at 30.2 mph with the Caterpillar 619 tractor. Athey Products Corp., 5631 W. 65th St., Chicago 38, Ill.

Batching Plant Sets Up Fast

A two-part portable concrete batching plant can be off the road and set up within three hours, it is claimed. The plant contains all the equipment for storing and batching aggregates and cement.

The 40-ft gooseneck (picture) is the conveyor belt structure that houses a 24-in.-wide conveyor. Belts, air hose for the air-operated equipment, and tires are by B. F. Goodrich Co. Erie Strayer Co., Erie, Pa.

Bituminous Batch Plant Made in 5,000-lb Capacity

A 4,000-lb to 5,000-lb capacity bituminous batch plant has been added to the line produced by Pioneer Engineering. The unit has fully automatic controls with inter-locking timer and twin discharge gates that open lengthwise of the pugmill.

The drier-dust collector unit is rated up to 150 tons per hour. A built-in power operated sampling device enables rapid taking of samples simultaneously. The plant is designed for operation by electric motors. Total weight of the unit, including hot elevator, is about 88,000 lb. Pioneer Engineering, Division of Poor & Co., Inc., Minneapolis 14, Minn.

Tractor Crane Boom Moves in All Directions

A tractor crane designed for in-plant and yard handling of odd sized or shaped pieces of material is equipped with a boom that moves horizontally and vertically and retracts or extends simultaneously.

The operator can rotate the boom 360 deg continuously, raise it from horizontal to 75 deg and vary its length from 63 in. to 103 in.

The unit, known as the Go-Devil 20RM2, has a capacity of 2,000 lb. It has a 54x54-in. platform in front and additional platform space on one side for handling pipe and other long objects. It has a speed range of from 2 mph to 12 mph. Drott Manufacturing Corp., 3126 South 27th St., Milwaukee 15, Wis.

40-Ton Crane Features Removable Outriggers

Removable outrigger beams and supports, air brakes on all wheels and power steering are featured on a 40-ton, 8 x 4 tire-mounted crane.

The crane, known as CraneMobile 610-TS440, is also equipped with power steering and variable speed transmission with 12 speeds forward and three reverse. The interchangeable main boom and sections are designed to handle all types of loads from the 30-ft boom length up to 150 ft of boom and jib.

The 610-TS440 can lift and walk with a 63,000-lb load and handle 5,000 lb over the rear on 150 ft of boom at 100-ft radius. It is convertible for use as a clamshell, dragline or pile driver. Bay City Shovels, Inc., 2611 Center Ave., Bay City, Mich.

White tandem-axle line of . . .

Trucks to Fit Varied Needs

A line of White tandem-axle construction trucks is made for use with dump bodies, dump trailers, concrete mixers, flatbed bodies and other specialized operations.

Four models are available, in both gas and diesel, from 35,000 to 75,000 gross vehicle weight. The company's "unit option plan" permits tailoring each of the models to requirements of the operator.

The 2064 can be put together for a GVW of 35-40,000 lb; the 4264 for 40-75,000 lb and 5 to 10 cu yd mixer capacities; the 4464D for 45-75,000 and 6 to 9¼ cu yd mixer; the 9064 for 45-75,000 lb and 5½ to 10 cu yd mixer. The last one is a 90-in. bumper-to-back-of-the-cab truck for maximum payload in minimum length.

All models have a simplified radiator and fender assembly. The radiator core is removed by unbolting the front grille, and without removing the radiator shell. The bumper and front fender can be removed so that a mechanic stands between an out-turned wheel and the engine compartment for work under the hood.

Tandem rear axles come in single reduction, double reduction hypoid and double reduction planetary differential with applicable axle ratios and choice of suspension.

Gas engines for the models range from 145 to 215 hp; diesels from 180 to 220 hp.

Standard transmission is five-speed main with three-speed auxiliary. White Motor Co., 842 E. 79th St., Cleveland 1, Ohio.

Aluminum Pumps Dissipate Heat Faster

A new line of hydraulic pumps with capacities from 9 to 100 gpm has been introduced by Clark Equipment Co. They are designed for off-highway, construction, industrial and aviation equipment and other mobile field units, and can operate at pressures up to 2,000 psi and speeds up to 3,000 rpm.

Five of the 10 models in the complete line are now in production and the others will be in production by this fall. Capacities of the ten pumps are: 9, 11, 15, 18, 21, 30, 40, 50, 80 and 100 gpm.

In addition to being light weight the all-aluminum pumps are said to dissipate heat better than cast-iron models. They are quiet running, shock absorbing internally and can be dismantled and rebuilt in the field without loss of efficiency, according to the manufacturer. Clark Equipment Co., Benton Harbor, Mich.

BUILDING CONSTRUCTION HANDBOOK

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“Schools framed with structural steel make a lot of sense to an engineer. Steel is strong. Its behavior under stress is predictable; you can calculate its ability to support loads precisely, and in advance. There's no guesswork. Steel is stable and uniform, too. It remains in its original form. You always know what you're getting. In combination with other non-combustible materials, steel-framed schools greatly reduce fire hazards.”

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"As the owner of a four-story parking garage, I'm naturally interested in costs. I've found my steel-framed building very easy to keep up. Where the steel is enclosed, I know it will last indefinitely. Where it's exposed, an occasional coat of paint keeps it as good as new. And, of course, steel won't shrink, warp, sag or rot. First cost was just as attractive, thanks to the quick construction of the steel frame. It went up in a matter of days."

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Men and Jobs

Texas' Mason Graves Lockwood wears . . .

Many Hats—And They All Fit

Taken by his intellectual manner and mild appearance, a reporter for the Houston Post once wrote: "A stranger would need only one glance to decide that Mason Graves Lockwood is an engineer" or, perhaps, a professor of engineering. What impressed the reporter, however, was that the subject of his story was by no means an ivory tower dweller.

The reporter would be even more impressed today, for since his piece was written Mason Lockwood of Texas has been president of the American Society of Civil Engineers (at 53, the youngest in over 50 years), and this year he is, of all things, president of the Houston Chamber of Commerce.

Previously he had been president of the Texas Society of Professional Engineers, president of the Texas Section of ASCE, secretary of the Houston Engineers Club and an elder of the Second Presbyterian Church in Houston. Over the years he has been given many hats to wear, and all have proved to fit.

Homespun, Mason Lockwood may be, as the Post reporter attempted to convey, but to lead such a go-getting organization as the Houston Chamber of Commerce suggests he has even more talents than the reporter could have guessed. It also suggests a degree of perspicacity on the part of the board of directors of the Chamber not commonly associated with bodies of this kind, which usually look for their presidents among merchants, bankers, lawyers—or, in Texas, oilmen and cattle ranchers. For an engineer to be chosen for such a post is rare enough to warrant a close look at the circumstances.

To start with, Mason Lockwood was not unknown as a civic leader in Houston, and he had served an apprenticeship as a member of the Chamber's board of directors. A resident of the city all his adult life, he was also an active alumnus and had served on the Board of Governors of Rice Institute, an institution in which Houston takes great pride. Moreover, he was a highly successful consulting engineer whose firm, Lockwood, Andrews & Newnam, had based its practice and focused its future on service to the rapidly developing Texas Gulf Coast, of which Houston is the self-appointed capital.

These are, of course, impeccable credentials, but they do not constitute sufficient reason for an engineer to be selected to head the Chamber of Commerce. The board of directors, however, could be credited with knowing that Mason Lockwood was not the quiet, retiring individual that the Post reporter's description might seem to imply, that he could speak publicly with a conviction that wins audience attention and quite often agreement and that he could tell stories about Texas and Texans with the best raconteurs. These were useful characteristics for the job at hand.

But also useful and more compelling could have been Mr. Lockwood's proven capacity as a deep and earnest thinker on professional engineering matters and his demonstated willingness to accept leadership in organizations devoted to the well-being of engineers and the advancement of engineering.

While he has been on the ASCE Board of Direction, for instance, (for five consecutive years) he has not only done his full share of administrative chores, but has found time to address engineering audiences from coast to coast—and always with thoughtful messages (for a few samples, see p. 57).

If a man would think deeply and work so conscientiously for his profession, it could readily be reasoned that his energies could be turned, at least temporarily, to advancing the interests of Houston. That one of these interests of current commanding importance—an additional water supply for the city from the Trinity River—required a non-flamboyant approach, positive engineering knowledge and the utmost in fair-minded economic analysis was unquestionably a potent argument favoring selection of Mason Lockwood to head the Houston Chamber in 1959.

There is no doubt in the minds of Lockwood's friends that the selection was a wise one for Houston. They are not so sure that Lockwood himself is going to be wholly happy with the job. And one reason involves the Trinity water project.

In proposing to build a dam on the river, Houston is meeting opposition from the Trinity River Authority, a state body charged with developing the whole watershed by revenue bond financing. The TRA offered to sell Houston part of the water from one of its still-to-be-built reservoirs, but the amount suggested is less and the price more than Houston thinks it would be if the city built the reservoir for its own account.

Dallas is in the upper reaches of the Trinity watershed and aspires to making "its" river navigable for barge traffic through an extensive system of locks and dams. The classic rivalry between

Dallas and Houston is at its highest pitch now over the Trinity River situation and over the struggle for the favored position in the prospective southern transcontinental air route linking California and Florida through Texas.

As president of the Houston Chamber of Commerce, Mr. Lockwood must, of course, carry the ball for the Houston water plan. The irony of the situation is that his great and good friends, T. Carr Forrest and James C. Cotton of Dallas, are consultants to the Trinity River Authority and the authors of its river development plan. Neither Lockwood nor his firm had any connection with the engineering studies, which were the origin of the Houston go-it-alone proposal, but he will inevitably be promoting it in opposition to Carr Forrest and Jim Cotton. Their friendship and respect for one another will survive, but unpleasant situations are bound to arise.

Another difficulty would seem to face Mason Lockwood because of his selection to be Chamber president this year. One of his partners, Frank H. Newnam, Jr., is 1959 president of the Texas Society of Professional Engineers and the other partner, William H. Andrews, has been reappointed a member of the Texas State Board of Registration for Professional Engineers. These outside activities, plus the fact that Mr. Lockwood, himself, is still very much occupied with ASCE affairs as a recent past-president, presages much overtime work for the principals of the firm.

No one, however, expects the work of the firm to slow down because of these extra-curricular activities. It is a growing, dynamic organization, with seven associates in addition to the three partners and a complement of 80 permanent employees.

Within the past three years it has built and occupied its own new headquarters building with 17,000 sq ft of space in Houston, built a new office building in Victoria, where it has been operating since 1949, and rented new quarters in Corpus Christi, where work has been carried on since 1951. A glance at a map will show that the three offices are well placed to handle work anywhere in the Gulf Coast region of Texas.

Lockwood, Andrews & Newnam is properly classified as a general consulting firm. Most of its work is civil and structural engineering, although electrical, mechanical and architectural engineering divisions are a part of its organizational setup. Actually, too, Andrews is a graduate mechanical engineer (from Texas A & M), while Lockwood's college degree is in electrical engineering.

It is interesting to note that had the Houston Lighting & Power Co. been a little quicker on the trigger with a raise, Mr. Lockwood might still be an employed electrical engineer. But after working for the company for eight years and rising to the position of office manager in the engineering department, he decided he wasn't getting anywhere and tendered his resignation. He and Andrews formed the firm of Lockwood & Andrews in 1936. Frank Newnam joined the firm as a partner in 1946. Mr. Newnam is a civil engineering graduate of Texas A & M. He had been with the Texas Highway Department and then an officer in the Corps of Engineers, first in the Galveston District and then chief engineer, Service of Supply in China.

The firm has been identified with many important industrial and public works developments, especially in the Texas Gulf Coast region, but it has also gone farther afield. At various points throughout the country, and at some overseas locations, it has done work for the military, including airfields, ordnance depots, fueling facilities, docks and industrial plants.

It is now completing a $5-million pier job for the Board of Harbor Commissioners of Milwaukee, in anticipation of St. Lawrence Seaway traffic.

But most of its activity is concentrated closer to home and includes harbor works, water supply, highways, airports and industrial plants, as well as air conditioning and electrical systems. A recent list of some of the firm's clients showed 61 companies ranging alphabetically from Alcoa to Union Carbide, 10 Texas cities from Arkansas Pass to Waco, nine Texas counties and a dozen navigation authorities as well as 10 colleges and universities.

Lockwood on Engineering:

- "Engineering is a creative profession, but engineers of bygone generations invoked far more of their latent creative ability than we do."
- "A thorough-going job of original engineering—whatever it costs—is in the interest of economy on nearly all important projects."
- "Civil engineering is now being mass produced and mass marketed under the most severely competitive conditions. This is a professional contradiction of very serious import."
- "The horizons for research in engineering are virtually unlimited, but only manufacturers with materials to sell or contractors seeking a competitive advantage do any of it."
- "Engineers must have an instinctive willingness to submerge selfish interests where they conflict with the public or professional welfare. The principle of 'Let the Buyer Beware' cannot apply where professionals sell their services to laymen."

Mr. Lockwood's particular assignments are most likely to include water supply, industrial developments, engineering appraisals, utility investigations, military airfields and economic studies and reports. Some of these have, no doubt, had to be transferred to other hands under the pressure of Chamber of Commerce business. But Mason Lockwood has had to cope with multiple hats before—and they've always fit.

Careers

Business

L. Tarnopoll, K. V. Ozols and **G. G. Strandaard** have formed the partnership of Bala & Strandaard, civil engineers in San Rafael, Calif. Mr. Bala was formerly project design engineer with International Engineering Co., Inc., in San Francisco and Mr. Strandaard was senior civil engineer with Sverdrup & Parcel Engineering Co., Inc., in San Francisco.

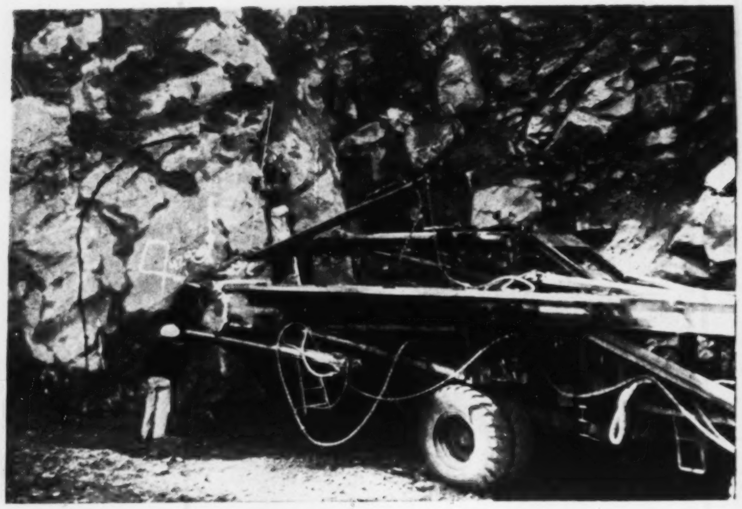
L. Tarnopoll, K. V. Ozols and **G. G. Otis** have joined the firm of Tarnapoll & Associates, New York City. They will serve as consultants in engineering, management, research and development.

Porter W. McDonnell, Jr., has joined Eugene Dietzgen Co., Chicago, as product manager for civil engineering instruments. For the past three years he has been an instructor at Case Institute of Technology, Cleveland.

Robert J. Armstrong has been elected vice-president of Coakley & Booth, Inc., New York City foundation specialists. He joined the firm in 1956.

Raymond S. Chase has been appointed sales manager of the Dundee Cement Co., Dundee, Mich. Previously he worked for the Masonite Corp. in sales, advertising and promotion.

CONSTRUCTION DAILY



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Other recent Frazier-Davis jobs have been in Arizona, New York, Pennsylvania, and Ohio. In addition to tunnels, projects have ranged from power plants to warehouses.

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Now in its 43rd year of continuous operation, this company has earned a commendable reputation in the field of heavy construction both through its successful undertaking of hazardous jobs and a refusal to over-expand; thereby keeping operational control in the hands of a knowledgeable and experienced staff.

During Frazier-Davis' early years, its jobs were composed primarily of sewers, railroad work, highways, bridges, etc. For many years, however, its activities have encompassed virtually every type of heavy construction.

The home office of Frazier-Davis Construction Co. is at 1319 Macklind Ave., St. Louis 10, Mo.

Construction Daily
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Dept. EN-R 105

330 West 42 Street, New York 36, N. Y.

Louisiana Water Main Relocation

Complications on this $121,000 water main relocation include draining 1,300,000 gal of water from the old main and complete tie-in of the new 50-in. line within 24 hours; laying 50-in. steel pipe inside 66-in. steel castings; and cuts up to 18 ft.

Work is for the Sewerage and Water Board of New Orleans. John J. Porte is the engineer.

It attracted only two bidders. Boh Bros. Construction Co., New Orleans, was low, 5% under the second but 52% over the engineer's estimate.

The 24-hr tie-in main is 50 in. ID steel, 3/8 in. wall, laid in open trench.

The other 50-in. steel pipe has 1/2-in. wall and was to be laid inside a 66-in., 10-ga. corrugated steel casing. However, a premium of $8,650 was paid to lay 295 of the 305 ft of pipe which goes under an interstate highway and tracks of the Union Passenger Terminal, inside a 66 in. casing of 5/16-in. plate construction, of which 40 ft will be liner plates. The other 10 ft will be in an 18 ft cut.

The city will furnish a fire hydrant and 12 in. valve.

Wages include: trenching machine, tractor, bulldozer, power crane & shovel operators $3.225; carpenters $3.10; common laborers $1.80.

The bidding included:

1C	Boh Bros. Constr. Co., New Orleans, La	$121,004
2	Pratt Farnsworth, Inc., New Orleans	127,179
EE	John J. Porte, Sewerage & Water Board, New Orleans	79,528

Bids: 6-5-69		Quan-	Unit Prices	
Items	Unit	tity	1C	2

Cast Iron Main

Items	Unit	Quantity	1C	2
CI main, 12", in open trench, incl reducers, tees, sleeves & plugs f&i	lf	275	$12.00	$16.33
vlv & box f&i	ea	1	375.00	268.00
Hydrant, 5", & leads f&i	ea	1	260.00	268.00

Main Relocation

Items	Unit	Quantity	1C	2
Stl main, 50", coal tar enam lined & 2" cmt mortar ctd, 3/8" plate thick, in open trench f&i	lf	270	93.00	74.00
1/2" plate thick, inside 66" casing f&i	lf	70	85.00	102.82
Vent tees, compl w blind flange, bolts, nuts & gasket f&i	ea	2	900.00	1,396
Cor stl casing, 66", 10 ga, incl split section f&i	lf	70	85.00	53.14
Matl to tie in new stl main w exist main, incl remov 12' sect of exist 50" main at each tie in f&i	ea	2	1,500	1,418
Access MH over vent tee, furn necessary matl & construct	ea	1	250.00	407.00

Main Crossing

Bids: 6-5-59		Quan-	Unit Prices	
Items	Unit	tity	1C	2
Casing in open trench, incl goose neck vent, cor stl, 66", 10 ga f&i	lf	255	100.00	127.43
alt. stl, 66" ID, 5/16" plate thick, coal tar enam ctd & lined f&i	lf	255	130.00	167.47
Xing under UPT tracks, cor stl liner plates, 66" 10 gage f&i	lf	40	175.00	179.40
alt. stl casing, 66" 10 ga ID, 3/8" plate thick, coal tar enam lined & ctd, jacked in place f&i	lf	40	200.00	234.47

Bids: 5 6 59		Quan-	Unit Prices	
Items	Unit	tity	1C	2
Stl main, 50" ID, 1/2" plate thick, coal tar lined & ctd, w added coat 2" cmt-mortar, inside casing, & or liner plates f&i	lf	295	90.00	84.96
in open trench, outside casing & or liner pl f&i	lf	10	85.00	103.40

Other Contract Items

Bids: 6-5-59		Quan-	Unit Prices	
Items	Unit	tity	1C	2
Conc, cl A, added in place	cy	5	20.00	42.00
Stl reinf, added in place	lb	100	0.15	0.22
Stl pipe, trim additional 50" ID				
3/8" plate thickness	ea	2	100.00	40.00
1/2" plate thickness	ea	2	100.00	75.00
Exc, extr over plan requirements	yd	100	0.10	2.75
extr to remove stumps	cy	10	0.10	1.00
Foundation lumber, in place	Mfbm	1	110.00	110.00
Sand fill or bed, ip, white	cy	125	4.00	4.00
river	cy	300	2.25	2.25
Clam shells, var purposes, ip	cy	175	3.50	3.75
Conc pave for road restor, ip	sy	60	12.00	11.50
curbs, cut & replace	lf	50	2.00	3.75
Schillinger sidew, cut & repl	sy	30	6.00	6.00
Coat tar lining, added ip	sf	20	2.50	2.25
coating added ip	sf	20	3.00	3.00
Cmt mortar ctg, added ip	sf	20	2.00	2.50
Steel fittings, added f&i	t	1	600.00	650.00
Brickwork, added f&i	cy	5	75.00	75.00
Dished heads, instal	ea	2	200.00	100.00
Asph surf, ip, to restore rdwys	t	4	40.00	30.00
binder, ip, to restore rdwys f&i	t	10	30.00	22.00
Cast iron specials, added f&i	t	1	400.00	500.00
Misc iron castings, furn & place	lb	500	0.30	0.55
Air vent cocks & vent cock manholes f&i	ea	2	250.00	400.00

f&i Furnish & instal ip In place

Completion schedule: 90 days Liq. damages $25 day

Reserve Centers, Puerto Rico

Two contracts total $688,974 for two Army reserve training centers in Bayamon and Caguas, Puerto Rico, for the Corps of Engineers, Jacksonville, San Juan Area office. The awards were as follows:

Site	Contractor	Amount	Chge. from engr. est.
Bayamon	Antilles Constr. Co., Bayamon, P.R.	$416,258	−6.7%
Caguas	Wm. L. Crow Constr. Co., New York City	272,716	+10%

The award on the Bayamon site work was almost 25% below the high of the six bids submitted. That on the Caguas job was 16.5% below the high of six bids.

A reserve training center building will be constructed at each site. A 3-bay maintenance shop is scheduled for Bayamon, and a 2-bay shop for Caguas.

Building construction costs break down like this:

Site	Building	Cost	Area	Cost per sf
Bayamon	Training bldg	$272,000	22,524 sf	$12.08
	3-bay Maint. shop	32,000	3,668 sf	8.72
Caguas	Training bldg	182,400	11,102 sf	16.43
	2-bay Maint. shop	30,480	2,357 sf	12.93

The above costs are exclusive of site preparation, paving, sidewalks, water lines, sewers, floodlighting of parking areas and related work, which are included in the contracts.

Prevailing wages on the Caguas job include: tractor operator $1.80; crane & shovel operator $1.75; carpenter $1.10; common laborer $0.65.

The six bids received on both sites include:

Bayamon

1C	Antilles Constr. Corp., Bayamon, P.R.	$416,258
2	The Blythe Co. of Puerto Rico, Inc., San Juan, P.R.	449,963
6	McDonough Constr. Co. of Fla., Miami	553,774
EE	Corps of Engineers, Jacksonville District, San Juan, P.R.	446,270

Caguas

1C	Wm. L. Crow Constr. Co., New York City	$272,716
2	Harada Corp., Puerto Nuevo, P.R.	273,140
6	Ralph H. Woelfel & Son, Hazelton, Pa	326,532
EE	Corps of Engineers, Jacksonville District, San Juan, P.R.	247,580

Bayamon

Bids: 3-10-59		Quan-	Unit Prices	
Items	Unit	tity	1C	2
Army reserve training center bldg, compl	ls	job	$272,000	$273,800
3-bay maint shop, compl	ls	job	32,000	56,000
Concrete sidewalk	sf	3,115	0.35	0.50
Excavation, uncl	cy	21,000	1.00	0.90
Site preparation	ls	job	24,600	13,000
Stab aggr base crse, 13"	sy	13,220	2.25	3.00
Bituminous prime coat	gal	2,640	0.28	0.48
tack coat	gal	1,320	0.28	0.24
conc surface course	t	1,460	8.75	14.00
material	gal	21,900	0.30	0.25
Water lines	ls	job	700.00	4,800
Sewage coll & disp syst	ls	job	4,000	2,400
Flagpole	ls	job	528.00	800.00
Paint traffic stripes	lf	2,820	0.05	0.30
Chain link fences, gates & sentry house	ls	job	7,000	7,500
Floodltg,parking area	ls	job	3,000	3,200

Commence: 3-23-59 Complete: 2-16-60

Liquidated damages: $125 cal day

Caguas

Bids: 3-10-59		Quan-	Unit Prices	
Items	Unit	tity	1C	2
Army reserve training center bldg, compl	ls	job	$182,400	$177,093
2-bay maint shop, compl	ls	job	30,480	30,000
Concrete sidewalk	sf	2,710	0.50	0.50
Excavation, uncl	cy	3,500	1.25	2.00
Borrow, off site	cy	14,300	1.25	1.50
Site preparation	ls	job	7,500	2,000
Stab aggr base crse, 9 1/2"	sy	4,180	2.20	3.00
Bituminous prime coat	gal	940	0.30	0.50
mac wear course	gal	4,180	1.75	3.00
Water lines	ls	job	4,000	2,500
Sanitary gravity sewer	ls	job	300.00	1,000
Flagpole	ls	job	700.00	600.00
Fences & gates	ls	job	4,000	1,500
Paint traffic stripes	lf	920	0.15	0.10
Floodltg, parking area	ls	job	2,800	3,000

Commence: 4-20-59 Complete: 3-8-60

Liquidation damages: $75 cal day

Labor and Materials Prices

Monthly Market Quotations by ENR Field Reporters

HOURLY WAGE RATES—Base rate + fringe benefits

	Common Labor									Truck drivers		
	Building	Heavy Const	Bricklayers	Carpenters	Struct. Iron Workers	Hoisting Engineers	Plasterers	Electrical Workers	Steamfitters	1½ T	under 4 cy	over 4 cy
Atlanta	$1.825	$1.825	$3.85	$3.20	$3.30+7½¢	$3.325	$3.25	$3.50+10¢	$3.70+20¢	$1.75	$1.85	$2.10
Baltimore	2.20+7½¢	2.20+7½¢	4.10+10¢	3.30+7½¢f	3.90+7½¢	3.80/3.95+10¢	3.60+7½¢	3.42½+7½¢	3.30+7½¢	2.10+7½¢	2.10+7½¢	2.20+7½¢
Birmingham	1.75	1.85	3.85	2.95	3.45+10¢mn	2.77	3.17	3.425	3.40+10¢Rp	1.83	2.02	2.35
Boston	2.65+10¢	2.55+10¢	3.80+30¢	3.45+10¢	4.02+20¢	3.77½+10¢	3.65+35¢	3.75+25¢	3.20+10¢	2.45	2.45	2.65
Chicago	3.02½+7½¢	3.02½+7½¢	4.07½+7½¢	3.75+20¢o	4.15+16¢n	3.75+5¢	3.95+23¢	4.10	3.95+23¢	2.46+15¢		
Cincinnati	2.75	2.65	3.88+10¢	3.57½	3.65+10¢	3.375/3.60	3.725	3.92+4¢	3.80+9½¢	2.45+2½¢	2.55+2½¢	2.65+2½¢
Cleveland	3.25b	3.165b	3.965+10¢b	3.99b	3.89+10¢b	3.99b	3.99a	4.05b	3.80+19¢b	2.82+15¢a	2.82+15¢a	2.82+15¢a
Dallas	1.80	1.80	3.95	3.25b	3.425+7½¢	3.375	3.625+13¢	3.50+7½¢	3.575+8½¢	1.80/2.625	1.80/2.625	1.80/2.625
Denver	2.25	2.25	3.90	3.50	3.41+7½¢	3.15	3.625+12¢	3.75+14¢	3.80+10¢	2.30	2.50	2.65
Detroit	2.80+42¢	2.80+42¢	3.90+30¢	3.55+42¢	3.90+22½¢	3.55+36¢	3.66+34¢	3.90+73	3.835+17½¢	2.95	2.95	2.95
Kansas City	2.455	2.505	3.95	3.50	3.55	3.445	3.75	3.60+28¢	3.60+9½¢	2.43	2.43	2.505
Los Angeles	2.88+10¢	2.88+10¢	4.00+15¢	3.60+20¢	3.85+20½¢	3.61+15¢	4.125+42½¢	4.40+44	4.10+51¢	3.15½+10¢	3.15½+10¢	3.345+10¢
Minneapolis	2.70	2.70	3.875	3.45	3.62	3.45	3.40+33¢	3.55+39¢	3.57	2.70	2.70d	2.85
New Orleans	1.80e	1.80e	3.575+7½¢d	3.10d	3.40+7½¢d	3.225+7½¢d	3.12+5¢jk	3.475+7½¢	3.50+15¢dl	2.575+7½¢d	2.575+7½¢d	2.575+7½¢d
New York	3.30+26¢c	3.30+26¢c	4.80+44¢	4.40+35¢k	4.60+47¢j	4.65+37¢	4.35+52¢	4.18+1.32	4.50+50¢	2.35+22½¢	3.15+23½¢	3.15+23½¢
Philadelphia R*	2.50	2.40+10¢	4.10+17¢	3.785	4.30+23¢	3.935/4.215	4.15+15¢	4.22½+16¢	4.10+31½¢		2.57+15½¢	
Pittsburgh	2.575+20¢	2.425+20¢	4.30+20¢	3.775+20¢	4.15+20¢	3.73+20¢	3.95+20¢	4.35+32½¢	4.00+20¢	2.37+20¢	2.51+20¢	2.61+20¢
St. Louis	2.775+10¢	2.775+10¢	4.05+32½¢	3.725+10¢c	3.75+7½¢	3.825	3.90+17½¢	3.95½+29.8¢	3.92½+27½¢	2.80+12½¢	2.80+12½¢	2.80+12½¢
San Francisco	2.685+10¢	2.685+10¢	4.10+42½¢	3.505+32½¢	3.85+20¢	3.405+10¢	3.74+52½¢	3.91+34½¢	3.70+46¢	2.81+10¢	2.75+10	2.89+10¢
Seattle	2.85+10¢	2.85+10¢	4.15+10¢	3.32+10¢	3.59+10¢	3.59+20¢	3.57+30¢	3.65+26¢	3.81+24¢	3.15+20¢	3.15+20¢	3.35+20¢
Montreal	1.60+4¢q	1.60+4¢q	2.40+5¢q	2.20+5¢q	2.45+5¢	2.30+5¢	2.35+5¢	2.35+5¢	2.47+5¢s	1.60+4¢	1.60+4¢	1.60+4¢
Toronto	1.80+7¢	1.80+7¢	3.00+12¢	2.80+12¢	2.85+11¢	3.05+12¢	3.00+20¢	3.30+13¢	3.20+13¢	1.85+13¢	1.85+7¢	1.85+7¢

	Tractor Operators Incl. bulldozers			Tractor scraper	Power cranes & shovels		Motor grader	Air comp	Air tool
	34-49 hp	70-100 hp	100 & over	15-16 cy	½ cy	¾ cy	oper	oper	oper
Atlanta	$2.85	$3.00	$3.00	$2.85	$3.375	$3.525	$2.85	$2.775	$1.925
Baltimore	3.40/3.55+10¢	3.40/3.55+10¢	3.40/3.55+10¢	3.40/3.55+10¢	3.80/3.95+10¢	3.80/3.95+10¢	3.40/3.55+10¢	2.85/3.00+10¢	2.25+7½¢
Birmingham	2.79	2.79	2.79	2.93	2.93	2.93	2.89	2.52	1.90
Boston	3.40+10¢	3.40+10¢	3.40+10¢	3.40+10¢	3.775+10¢	3.775+10¢	3.40+10¢	3.325+10¢	2.60+7¢
Chicago	3.50+5¢	3.65+5¢	3.30+5¢	3.30+5¢	3.80+5¢R	3.80+5¢R	3.50+5¢	3.40+5¢	3.70+5¢
Cincinnati	3.375	3.375	3.375	3.375	3.375	3.60	3.60	3.60	3.60
Cleveland	3.74b	3.74b	3.74b	3.74b	3.99b	3.99b	3.74b	3.615b	3.615b
Dallas	1.80/2.625	1.80/2.625	1.80/2.625	1.80/2.625	3.10h	3.10h	1.80/2.625	1.95	1.95
Denver	2.40	3.00	3.00	3.00	3.15	3.15	3.00	3.00	2.53
Detroit	3.55+36¢	3.55+36¢	3.55+36¢	3.55+36¢	3.55+36¢	3.55+36¢	3.55+36¢	3.275+15¢R	2.93+34¢
Kansas City	2.75	3.20	3.20	3.20	3.445	3.445	3.20	3.20	2.55
Los Angeles	3.91+15¢	3.91+15¢	3.91+15¢	4.01+15¢	4.01+15¢	4.01+15¢	4.01+15¢	3.13+15¢	3.09+10¢
Minneapolis	3.08	3.30		3.30	3.52	3.78	3.08	2.97s	2.85
New Orleans	3.225+7½¢d	3.225+7½¢d	3.225+7½¢d	3.225+7½¢d	3.225+7½¢d	3.225+7½¢d	3.225+7½¢d	2.575+7½¢d	1.90e
New York	4.925+32¢	4.025+32¢	4.025+32¢	4.15+33¢	4.90+39¢	4.90+39¢k	4.15+33¢	4.15+33¢	4.15+21¢
Philadelphia R*	3.52+10	3.665+10	3.665+10	3.79+10	4.215+10	4.215+10	3.765+10	3.41+10	2.35
Pittsburgh	3.44+10¢	3.44+10¢	3.44+10¢	3.44+10¢	3.64+10¢	3.64+10¢	3.64+10¢	3.15+10¢	2.30+20¢
St. Louis	3.825	3.825	3.825	3.825	3.825	3.825	3.825	3.275	3.275
San Francisco	3.70+10¢	3.70+10¢	3.70+10¢	3.70+10¢	3.85+10¢	3.85+10¢	3.75+10¢	3.10+10¢	2.955+10¢
Seattle	3.56+20¢	3.56+20¢	3.56+20¢	3.56+20¢	3.93+20¢	3.93+20¢	3.65+20¢	3.29+20¢	3.05+10¢
Montreal q	1.80+4¢	2.03+4¢	2.03+4¢	2.03+4¢	2.30+5¢	2.30+5¢	2.03+4¢	1.90+4¢	1.90+4¢
Toronto	2.30+10¢	2.40+10¢	2.40+10¢	2.40+10¢	2.90+12¢	3.05+12¢	2.70+11¢	2.40+10¢	2.40+10¢

ENR Skilled Average (Bricklayers, Carpenters, Iron Workers): $3.897. ENR Common Average $2.61

Description of fringe benefits last appeared Feb. 26; will next appear in Sept. 17 Cost Issue.

DEFERRED WAGE INCREASES UNDER PRESENT CONTRACTS: 1960: a May 1; 10¢ b May 1; 12¢ k May 1; 8¢ l May 1; 10¢ m Jan. 1; 15¢ n Jul. 1; 5¢ o Jun. 30; 22½¢ s Apr. 1; 15¢. 1959: c Dec. 1; 10¢ d Nov. 1; 10¢ e Nov. 1; 5¢ f Oct. 1; 20¢ g Sept. 1; 11¢ h Aug. 1; 7½¢ j Nov. 1; 7½¢ p Sept. 1; 11¢ q Oct. 1; 5¢
* Philadelphia wage rates revised, watch analysis

BUILDING BOARD & LATH AND INSULATION—DELIVERED TRUCKLOAD LOTS

	GYPSUM PLASTER BOARD tapered edge per Msq ft		GYPSUM BOARD LATH plain or perf per Msq ft	GYPSUM SHEATHING tongue & groove per Msq ft	FIBER BOARD SHEATHING asph Impreg & coat per Msq ft		FIBER BOARD INSULATION sq edge, paint per Msq ft	MINERAL WOOL INSULATION		GLASS FIBER INSULATION		ALUMINUM FOIL	
	½"	⅜"	⅜" x 16" x 48"	½" x 2' x 8'	½" sq ed	25/32" T&G	½"	loose, per 40-lb bag a	3" batts per M sf	loose, per 40-lb bag a	3" batts per M sf	60# Kraft 1 side foil per roll of 250 s. f.	Expansible Blanket 2 layers foil per Msq ft
Atlanta	$65.00F	$55.00F	$42.50F	$68.00F	$72.00F	$127.00F	$75.00F	1.59z	$70.00F	$2.00	$80.00F	.....	....
Baltimore	51.70	45.55	34.25	55.35	65.00	108.50	69.00	1.30F	66.50F	1.50F	45.00F	$4.00F	$33.50F
Birmingham	68.90H	57.00H	47.77H	75.00H	67.50H	140.50H	83.50H	1.40	70.00	1.60	75.00	3.77gG	....
Boston	60.00mH	50.00mH	36.00mH	60.00mH	65.00H	120.00H	79.00hnH	1.45bH	75.00H	..	75.00H	5.30xHS	53.50qH
Chicago	67.00	54.00	45.00	62.00	87.00	123.00	87.00	1.85	80.00	..	63.65i	5.25j	.....
Cincinnati	48.00wH	42.85wH	32.05wH	51.16wH	71.00wH	125.00wH	72.50wH	1.20wH	62.50wH	1.20wH	74.00wH	3.28jwJ	50.00wJ
Cleveland	62.00CF	56.50CF	41.50CF	65.00CF	80.00CF	129.00CF	80.00CF	1.35/1.50H	72.00H		63.75	17.50wJ	55.00J
Dallas	55.00	52.50	42.50	60.00	68.75	118.00	68.75	2.00	65.69	1.45	70.67	5.00gAG	45.00
Denver	66.50H	58.50H	45.00H	68.75H	84.00H	130.00H	84.00	1.50b	65.00ub	1.75b	65.00a	5.25	48.65
Detroit	66.00K	55.00K	43.00K	65.00K	62.50DK	103.50DK	62.50DK	1.30b	50.00	1.95b	88.00	...	..
Kansas City	65.00H	55.00H	40.00H		72.00H	115.00H	75.00H	1.40H	75.00H	1.60H	75.00H	3.60d	53.98
Los Angeles	Q 66.00F	60.50F	0.33zF	64.50F	75.00F	125.00F	80.00F	76.00BeF	83.00F	1.35s	64.00	4.40g	.....
Minneapolis	F 75.00F	65.00F	0.41zL	80.00F	95.00FR	130.00FR	78.00F	2.25yF	83.00F	2.10F	83.00F	5.50F	.....
Montreal	58.00M	49.30M	37 41.50M	53.00M	64.75M		58.50M	1.50M	66.00M	1.50M	66.00M	9.00qM	56.00M
New Orleans	57.00H	52.00H	45.00H	60.00H	67.00H	140.00H	80.00H	2.00L	70.00*				
New York	55.25	47.25	36.25	54.25	75.00	120.00	75.00	1.55b	68.50		68.50	4.38i	54.50c
Philadelphia	HR* 52.50	46.60	36.00	52.00	70.00	105.00	70.00	1.05	50.00	1.40	50.00	5.60/6.34	40.50
Pittsburgh	71.00K	65.00K	40.00K	63.00K	62.50K	102.50K	57.50K	1.05sK	55.00K	1.05sK	55.00K	3.80qK	38.50K
St. Louis	65.00HO	55.00HO	40.00HO	70.00HO	76.00HO	120.00HO	80.00HO	1.35yHO	85.00HO	2.09PHO	74.00HO	4.50qHO	
San Francisco	57.00F	48.00F	0.35zF	58.00F	68.00F	109.00F	67.00F	1.75F	66.50F	1.75F	66.50F	5.16	60.00F
Seattle	66.80K	57.65K	51.05K	65.00K	74.50K	125.00K	73.50K	1.15tK	58.00K	1.90*pK	51.00*lKb	4.25K	46.50EK
Toronto	58.00	50.00	38.00L	64.50	61.50T		70.00T	1.65	65.50		65.50	14.75o	46.00

•* F.o.b. warehouse. •a Semi thick. •b 30# bag. •c 12" to 24" width. •d 40# kraft paper, 5 Msf; 100 500 rolls. •e 20# sq ft bag, 4" thick. •f Full trailer loads. •g 80# kraft paper backing 400 rolls or over. •h LCL. •i 40#. •j 80#. •l 2". •m 8 to 10 ton quantities. •n Distributor's siding. •o Per Msf roll. •p 32# bag. •q 500 sf. •r Per cwt. •s 35# bag. •t 26# bag •u Flame proof $75. •w F.o.b. city. •x Sq. yd. •y 30# bag. •z Spun rock wool. •A 6.50 sf. •B ton. •C F.o.b. plant, freight allowed. •D CL. •E 10 Msf. •F less 2% disc, 10th. •G ½ of 1%, 10 days •H 2% disc, 10 days. •J 1% disc, 10 days. •K less 2% for cash. •L 5% disc, 10th mo. •M fed. tax incl. •N 1% disc, 10 days. •O add 2% sales tax. •P 50 lb. bags. •Q add 4% sales tax. •S 45 lb. •T less 2%, 30 days. * Philadelphia prices revised, watch for analysis

MEXICO CITY WAGES & PRICES R

WAGES, av per week, 8 hr day (pesos)		July '59	Jun '59
Common labor,	building (peons)	87.50	87.50
	heavy const (peons)	87.50	87.50
Skilled labor,	carpenters 1 cl	175.00	175.00
	bricklayers 1 cl	210.00	210.00
	struct. ironworkers	280.00	280.00

MATERIALS PRICES, F.o.b.City	July '59	Jun '59
Struct. steel shapes, fob Monterey		
I-beams, 3 x 3 x 4" per metric ton	2400.00	2400.00
Reinf. steel, corrugated rods, per ton		
⅜"-½" x 11 meters	1900.00	1900.00
¾"-1" x 11 meters	1900.00	1900.00

	July '59	Jun '59
Gravel, truckload, per cu meter		
Blue gravel	25.00	25.00
Cement, std. port. (Tolteca)	2.40	2.40
Lumber, 2"x4" 1st class pine..per M sq. ft.	2200.00	2200.00
2"x4" 2nd class pine..per M sq. ft.	1900.00	1900.00

Materials Prices

Monthly Market Quotations by ENR Field Reporters

STRUCTURAL CLAY BUILDING TILE, BRICK AND LIME—DELIVERED

	STRUCTURAL CLAY TILE PARTITION — SCORED Per M. lots of 2,000 pieces or over, 3x12x12 In.	4x12x12 In.	8x12x12 In.	STRUCTURAL CLAY TILE — LOAD BEARING — SCORED Per M. lots of 2,000 pieces or over, 8x12x12 In.	10x12x12 In.	12x12x12 In.	BRICK Per M. in quantity Common backing	Straight hard	LIME Per ton, in paper, Carload lot, Hydrated finishing	Common hydrated	Pulverized
Atlanta	$170.10pe	$153.25pkke	$306.55pe	$344.85pe			$31.50p	$33.75p	$36.50hh	$28.50hh	$28.50hh
Baltimore	217.00	231.00	434.00	491.00	602.00	690.00	36.00	41.00	35.60	23.20	
Birmingham	135.00pss	152.00pss		303.00p	376.00p	465.00p	27.00ff	38.00jj	38.28mm	20.87mm	26.33gmm
Boston	232.00†mm	248.00†mm	463.25†mm	556.00†mm	.....	.....	41.50p	56.50p	40.20§	32.20§	....
Chicago	137.00ll	149.00ll	280.00ll	.....	.....	.....	32.00	34.00	38.00ll	35.20o ii	....
Cincinnati	160.00mmjttR	172.00jmmttR	327.00iddmmR	390.00jmmttR	425.00jmmttR	500.00jmmttR	48.00jk	47.00jk	29.10jmm	25.10jmm	29.10jmm
Cleveland	200.00tt	213.00tt		453.00tt		693.00tt	41.75tt	45.75ggtt	32.75ptt	28.00ptt	....
Dallas	155.00	155.00	306.00	370.50	452.25	560.00	27.50	49.00	41.80	24.58	28.50
Denver mm	170.00	185.00	310.00	310.00	390.00	442.00	30.00	54.00	48.00p	42.00p	46.00p
Detroit	242.00mm	258.00mm	483.00mm	548.00mm	723.00mm	827.00mm	51.50pmm	52.00pmm	38.00mm	30.00mm	40.00mm
Kansas City mm	158.00	158.00	312.00	312.00	400.00	500.00	34.00	34.00	36.26	34.26	29.76
Los Angeles	r	r	r	r	r	r	38.00uu		38.00nnll	38.00nnll	39.00nnll
Minneapolis	192.00pe	215.00pe	437.00pe	215.00pwe	.....	.....	45.60vpe	54.00ype	49.00bbe	38.00bbe	52.00bbde
Montreal	168.78auqoo	180.93auqoo	325.00ausqoo	220.00qoo	400.00qoo	.....	48.25bll	56.30bll	39.00	22.00	13.25
New Orleans	198.00	198.00	370.00	370.00	.....	.....	42.00	55.00	44.00	32.00	32.00
New York	177.00h	189.00h	283.00ch	285.00hn	.....	.....	44.00p		50.00pR	40.00p	
Philadelphia R*	202.10ss	215.60ss	323.40ss	485.10ss	.....	.....	40.00mm	50.00mm	27.60mm	21.50	21.50
Pittsburgh pp	200.00t	213.00t	400.00t	453.00t	607.00t	693.00t	39.00t	46.00t	38.00t	33.00t	34.00t
St. Louis	172.00mmpp	180.00pp	375.00pp	401.00ppp	459.00pp	621.50pp	44.00mmpp	45.50pp	1.00aapp	.80aapp	1.35saapp
San Francisco	156.85*mm	177.10*mm	235.30dd*mm	159.40qqmm	.....	.....	43.00*mm	43.00*mm	29.24mm	29.24mm	31.74mm
Seattle	235.00pt	270.00pt	490.00pt	265.00pwt	.....	.....	48.00t	62.00t	52.00bbt	38.00bbt	4.50mbbt
Toronto	158.00rr	173.00rr	336.00rr	263.00frr	378.00rr	.....	35.00rr	63.00rr	38.00mm	34.50mm	33.50mm

•§ F.o.b. yard. •* F.o.b. plant Stockton. •† F.o.b. yard Roxbury. •a Smooth. •b $4.50 del. •c 8 x 12 x 12 in.-6 cell. •d Pulverized hot. •e less 5% disc., 10th., •f 8 x 8 x 12. •g Lumps, $26.72. •h F.o.b. trucks, job site N.Y.C. •i 60 lb sacks. •j Truck load or over. •k $1.00 discount per M, 10 days. •l Red face. •m Per bbl. 180 lb. processed. •n 7¾ x 7¾ x 12. •o Mason's double hydrated pressure. •p Truck lots. •q Provincial and Municipal tax extra (6%). •r Not used: earthquake danger. •s 8 x 16 x 12. •t less 2% disc., cash. •u Incl. Federal tax. •v Sand lime. •w 5 x 8 x 12. •y Chi common. •z Pebble; 80 lb sack. •aa 50 lb sack. •bb LCL. •dd 6 x 12 x 12. •ff 80% common. •gg Smooth. •hh less 25¢ disc., cash. •ii F.o.b. plant. •jj rough; smooth; $40. •kk 3½ x 11½ x 11½. •ll less 2% disc. 10th. •mm less 2%, 10 days. •nn F.o.b., L. A. •oo less 2%, 30 days. •pp add 2% sales tax. •qq 8 x 5½ x 11½. •rr 2½% disc., 10 days. •ss 5% disc., 10 days. •tt less 2% disc., 15th. •uu less 50¢ M, 10 days. •vv 4000 pcs. and over •R revised. ƒ eff. 3/1/59.

* Philadelphia prices revised, watch for analysis

PAINT, ROOFING—F. O. B. CARLOAD LOTS

	RED LEAD Per 100 lb. in 600 lb. (Approx.) bbl. F.O.B. Plant Dry a C	WHITE LEAD Per 100 lb. in 100 lb. cases in oil	READY-MIXED PAINT Per gal., drums Graphite b	Aluminum c	Ferric Oxide d	ROOFING SUPPLIES; Carload lots f.o.b. factory Rolls, slate surfaced, 85–90 lb. per sq.	Asphalt felt, per 100 lb.	Tar felt, per 100 lb.	Asphalt coating per gal.	Tar pitch 360 lb. bbl. per ton
Atlanta	$13.75ggJO	$24.00ggJ	$3.59	$3.86	$3.31	$2.90kk	$2.12kk	$2.49kk	$0.67kk	$61.20kk
Baltimore	17.50lpp	24.00	3.00	4.40	3.50	2.78	4.25	4.25	.48	54.75R
Birmingham	26.00†J	29.00†J	3.90J	3.40J	....	3.30†mm	2.45ii†mm	2.45ii†mm	.82ffmm	45.00eemm
Boston	24.95†oomm	26.90†mmm	....	....	....	3.91q	2.64g	2.83g	.50g	58.00g
Chicago	15.25rJqqpp	24.00†J	....	....	....	3.80ukk	2.76okk	3.00okk	48.00bbokk	57.70†kk
Cincinnati	15.25†JO	24.00†J	....		....	2.87mm	2.02omm	2.42omm	.428ymm	55.96Hmm
Cleveland	25.65†	26.90†	2.46gg	2.70gg	3.10gg	2.93q	2.05o	2.42o	.484y	49.00gg
Dallas	22.50	23.50M		3.25B		3.00u	3.00o	3.00o	.470	66.00hh
Denver	23.00n	24.00	3.98	5.20	3.70	3.19	2.34o	2.80o	.50ff	50.00
Detroit	15.25r	24.00rr	2.70mm	3.95mm	2.70mm	2.82mm	2.05ommll	2.42ommll	.56ffmm	49.00mm
Kansas City	26.90lggoo	25.65	3.99	3.43	3.01	4.01mm	2.72omm	2.72omm	.80y	.....
Los Angeles	12.00O	24.00	3.30n	4.50n	4.20n	3.40nkk	2.40niikk	l	.75nykk	l
Minneapolis	16.33N	21.50kk				3.28kk	2.59hikk	2.42hikk	.438ikk	50.00rkk
Montreal	19.45O	26.00wtt	5.52Dfft	6.55xfft	5.10kfft	5.40	4.65f	4.65f	1.60	4.40uu
New Orleans	23.00Jpp	24.00J	....	....		2.78	1.98	2.85	.680	15.50
New York	25.65oo	26.90	....	....	....	3.29	2.16o	2.45o	.438s	49.00*
Philadelphia R*	15.25Omm	24.75mm	3.60mm	3.40/3.65mm	3.50/4.00mm	4.70	3.60	2.85	.515	50.00
Pittsburgh	21.00mggJ	24.00J	2.20#EJ	2.25#FJ	2.25#GJ	3.57sH	2.75sH	2.95H	.48H	55.00H
St. Louis K	25.65†m	26.90				3.20iiemm	2.31hhK	2.96hhK	.428yK	62.00K
San Francisco	26.70mm	26.90mm	3.20mm	4.30mm	3.50mm	2.95mm	1.97aaiimm	3.10mm	.46jj	54.00
Seattle	13.35HO	24.00H		4.19ccffJ		3.64qccH	3.16hccH		.55cc	
Toronto	14.45	19.35	5.15J	6.18J	5.95J	2.70	2.40aae	2.40o	1.01j	19.00A

•† Delivered. • Note: Red lead in oil 50% higher than white lead in oil. •* Aver. wt. approx. 425 to 550 lb drums. •a Red lead prices change frequently due to pig lead price changes. •b U.S. War Dept. Spec. 3-49A. •c ASTM Spec. D266-31. •d 80% minimum ferric oxide. •e Per 108 sf roll. •f Per 432 sq ft. •g F.o.b. yard Roxbury. •h Per roll, 65 lb. •i Net carload prices, Minneapolis and vicinity. •j 45 gal containers. •k Over 80% ferric oxide. •l Not used. •m 100 lb. keg. •n F.o.b. city. •o Per 60 lb roll. •p 6-drum, 50 gal each. •q Per 90-lb roll. •r F.o.b. factory, Chicago. •s Truckload. •t Incl. Federal tax. •u Per 90-lb square. •v Per ton. •x Ready-mixed. •y 55-gal container. •z Drums. •aa 15 lb. •bb Roofers coating and cement. •cc LCL, truck delivery. •ee Asphalt pitch in 100 lb package. •ff 5-gal drums. •gg F.o.b. factory. •hh Incl. freight. •ii Per 324 sf roll. •jj Asbestos roof coating. •kk less 2% disc., 10th. •mm less 2% disc., 10 days. •oo 100 lb bbls. •pp 50 or 100 lb bags. •qq 500 lbs or more •rr F.o.b. plant, Detroit. •ss 50 lb bbls. •tt 25 lb kegs. •uu 250 lb bbls. •A 400 lb barrels. •B ASTM Spec. D962-49. •C 95%. •D Std. black. •# Milt. spec.: E TTP27; F TTY81; G TTP31. •H less 2% disc., cash. •I Per 100 lb. •J less 1% disc., 10 days. •K add 2% sales tax. •L CL. •M 1 ton or more. •N under 500 lbs, add $1 •O 50 lb. bag. •R revised

* Philadelphia prices revised, watch for analysis

PLASTER, VERMICULITE AND METAL BUILDING SHEETS & TUBING

	PLASTER‡ Neat per ton	Gauging per ton	VERMICULITE‡ Home Insulation pellets	Plaster aggregate	Concrete Aggregate Untreated	PERLITE‡ Plaster Aggregate	Concrete Aggregate Untreated	ALUMINUM SHEETC† Flat .102" th 36"x108" & 48"x144" per lbjt	Corr roof .032" th 35"x12' per shu	STAINLESS STEEL† SHEET-TYPE 302g 20 ga 48"x96"-120" per cwthh	28 ga 36"x120" per cwtmm	COPPER WATER* TUBING-TYPE L 2000 ft lots per ft ⅜"b	½"c
			per bag of 4 cu ft										
Atlanta	$31.50ss	$37.50ss	$1.55sss	$1.65sss	$1.80slss	$1.65ss	$1.65ss	$0.440noo	$8.83n	$65.68nzz	$74.43nzz	$0.1668ss	$0.2337ss
Baltimore	23.80	34.60	0.95	1.15	1.15	1.05/1.20	1.60	0.462	0.451r	63.00	71.25	0.16	0.2288
Birmingham	37.00ss	43.00ss	1.55ss	1.55ss	1.60lss	1.27ss	1.27lss	0.458dM	9.62K	67.34K	76.09K	0.16ss	0.23ss
Boston	22.00	30.00	1.40	1.40	1.40	1.45ss	1.50ss	0.462	29.35p	65.42dd*zz	71.92dd	0.1668ss	0.2337ss
Chicago	26.80tt	26.80tt	1.55	1.60	1.60l	1.60	1.60	0.506z	10.294a	64.15ee	72.40ee	0.1762	0.2464
Cincinnati	23.85*ss	23.85*	1.75*ss	1.75*ss	1.75*ss	1.85ssR	1.90ssR	0.434	9.59	65.30zz	74.05zz	0.1668ss	0.2337ss
Cleveland	28.00N	45.00N	1.13ss	1.16ss	1.24lss	1.45ss	1.45ss	0.458aa	8.48	64.33oozz	72.58oozz	0.1633tt	0.2288tt
Dallas	30.65	32.65	1.07	1.23	1.37	1.21	1.32	0.484	0.517r	65.00	78.00	0.1668	0.1986
Denver	27.00	27.00	1.50	1.40	1.50	1.40ss	1.55ss	0.452	10.89	69.07gg	82.57gg	0.1668	0.2337
Detroit	28.00ss	28.00ss	1.27ss	1.31ss	1.40ss	1.45ktt	1.50ktt	0.452a	10.19a	65.15azz*	73.90azz*	0.1668	0.2337
Kansas City	30.00	35.00	1.19E	1.21E	1.29lE	1.21		0.444	23.20ggyy	67.50E	76.25E	0.1672	0.2464
Los Angeles	27.00tt	28.00tt	1.25ktt	1.20ktt	1.25tt	1.06	1.10	0.486	10.543	65.02	73.27	0.1688	0.2288
Minneapolis	35.00F	35.00F	1.85tt	1.70F	1.80F	1.40S	1.40S	0.468	16.23	61.61GR	69.61ffG	0.1762f	0.2067
Montreal	27.60h	35.60h	1.25h	1.40h	1.50h	1.15v	1.15v	43.95AH	12.10H	64.75H		0.1840	0.2187
New Orleans	34.00	48.00	1.25P	1.35P	1.25P	1.25P	1.25P	0.526	24.90	71.50	72.45	0.1762	0.2464
New York	26.00	35.00	1.35	1.30	1.50	1.40	1.40	0.462ad	9.29a	65.00aB	73.75aB	0.1633	0.2288
Philadelphia	26.50	31.00ss	1.30ss	1.30ss	1.40lss	1.25ss	1.25qqss	0.44	9.46	63.00	71.25	16/18	22/24
Pittsburgh *	30.00nn	33.00nn	1.50nn	1.50nn	1.50mm	1.50nn	1.50nn	0.452	9.46	64.00	76.25pp	0.1555	0.1848
St. Louis uu	30.00uu	41.00uu	1.50uu	1.60uu	1.55uu	1.60uu	1.65uu	0.452	10.28	65.39Kmm	71.89yuu	0.1634fmss	0.1944fmss
San Francisco	29.50ss	30.50ss	1.38ss	1.38ss	1.50ss	1.38oss	1.58os	0.502	9.76	66.50K	74.25K	0.1762	0.2464
Seattle	42.40nn	45.60nn	1.55nn	1.25knn	1.85lnn	1.50k		0.513D	9.90D	65.02D	72.27D	0.1668	0.1752
Toronto	30.40	50.00	1.45	1.45	1.65	45.00Q		0.3995	24.75ap	73.74	86.52	0.2917	0.3265

‡trucklots, delivered †fob warehouse *fob city •a delivered •b ½" O.D. •c ⅝" O.D. •d 0.100"th •e 34" x 60" sheet •f per 100 ft •g 5 tons & up: cold roll, anneal & pickled 2B finish •h incl. Federal tax •i add 25¢ for pint of additive •j 1100 & 3003 alloy, mill finish •k bag of 3 cu ft •l treated with air entraining agent •m 2-10M ft •n fob mill fr equalized with nearest stocking competitor •o 250 sacks or more •p 100 sq ft •r per lb •s 30 lb bag •t 36" x 108";-10.81 lb/sh; 48" x 144"; 21.7 lb/sh •u 19.31 lb/sh •v fob plant •w 48" x 144" •x 0.11"th •y 27 gauge •aa 16M lb & up •dd add $1.00 cwt boxing •ee 4 tons & up •gg add $2 cwt boxing; $0.75/cwt on skids •hh Theoretical wt for 48" x 96"; 60.4-lb, per sh •ii 300-bag lots •jj 100-lb bag •mm Theoretical wt; 19.7-lb per sh •nn 2% cash •oo skid packed •pp type 304 •qq Philadelphia and suburbs. •rr less 2% disc. 15 days. •ss less 2% disc. 10 days. •tt less 2% disc. 10th. •uu add 2% sales tax. •vv Type N. •ww Per 100 sf. •xx less ½% disc. 10 days. •yy .021 ga. •zz .061" th. •A Per 100 lb. •B crated. •C 15M lb. •D less ½% for cash. •E Quantity differential. •F less 5% disc. 10th. •G less ½% disc. 10th. •H Fed. tax exempt. •K less ½%, 10 days. •L 5% disc. 30 days. •M 3003: .452 for 1100. •N less 2%, 15th mo. •O less $2. cash & carry. •P less 2%, 15 days. •Q per ton. •S add .10 bag under 200 bags. * Philadelphia prices revised, watch for analysis

Construction Reports

Bids Asked—Low Bidders—Contracts Awarded—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager J. A. MAHONEY, M. WETZEL, M. E. SCIORRA, D. TARTAGLIA, MARIE MORAVSIK, ELAINE CHOMYAK, ELIZABETH WERRA, ELEANOR QUERET, Reports, J. H. WEBBER, E. R. HUBER, Statistics.

NEW ENGLAND

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
August 4 Massachusetts
STREETS AND ROADS
August 14 Vermont

▲ **Massachusetts**—BA 8/11—Commonwealth of Mass., Metropolitan Dist. Comn., Constr. Div., 20 Somerset St., Boston, Contr. 252, distribution lines, Shaft 9A of City Tunnel Extension, 14,000 ft. pipe, etc. (part Spot Pond Flood Control). $1,440,000. CD 8/27.

BUILDINGS—BA

Mass., **Brockton**—MOTEL—BA 8/6—Peter & James Mihos, c/o Edgar H. Wood & Assocs., archts-engrs., 1050 Hancock St., Quincy, Mark IV Motel, Belmont and Manley Sts. $500,000. Plans deposit $50. CD 4/28.

Mass., **Longmeadow**—DINING HALL, etc.—BA 8/6—Bay Path Junior College, 588 Longmeadow St., dining hall and student center, campus. $400,000. Alderman & MacNeish, 594 Riverdale St. W. Springfield, archts. CD 5/13

▲ **Me., Orono**—DORMITORY—BA 8/14—University of Maine, Orono, women's dormitory. $1,000,000. Plans deposit $50. Alonzo J. Harriman, Inc., 292 Court St., Auburn, archt. CD 2/27.

▲ **Me., Portland**—LABORATORY, etc.—BA 8/14—University of Maine in Portland, Bd. Trustees, Orono, Me., laboratory, classrooms and library, Campus. $1,300,000. Plans deposit $100. Wadsworth & Boston, 57 Exchange St., archts. CD 4/24.

HEAVY CONSTRUCTION—LB & CA

▲† **Consolidated Contractors, Inc.**, 807 Congress St., Portland, Me., LB Est. **$3,400,000**, power plant and tunnel, Washington Co., Cutler, JONESPORT, ME. Dist. P. Wks. Office, 1st Naval Dist., 495 Summer St., Boston, Mass. Robert & Co., 96 Poplar St., Atlanta, Ga., engrs. CD 9/8.

▲ **CONNECTICUT**—State Hy. Comr., 170 Douglas St., Hartford,

Grandview Constr. Corp., 740 South Fulton Ave., Mount Vernon, N. Y., CA **$1,432,776**, relocation Rte. 4 from Unionville Bridge to Collinsville Bridge, Projs. No. 51-106 and 51-117, Burlington, Collinsville and Unionville. CD 6/17, under LB.

▲ **CONNECTICUT**—State Hy. Comr., 170 Douglas St., Hartford, Bids opened 7/20,

Conn.—**A. J. Orlando Constr. Co., Inc.**, 151-59 Powells Cove Blvd., Whitestone, N. Y., LB **$7,764,175** (12 bidders), concrete paving 20,842 lin. ft. relocation Rte. US 6, incl. bridges of various spans and 7 rein.-con. boxed culverts from 1,400 ft. east of Lake Ave. to 1,600 ft. east of Railroad, concrete pavement relocation Rte. U. S. 7, incl. two 3-span bridges and 2 rein.-con. boxed culverts, Fed. Aid Proj. 1-84-1(3) and F-5011 Proj. 34-84 and 34-106. Danbury;

Conn.—**L. G. Defelice & Son, Inc.**, Nettleson Ave., North Haven, Conn., LB **$2,735,538** (13 bidders), concrete paving 17,480 lin. ft. relocation Rte. U. S. 6, incl. 6 bridges from New York State line to 1,400 ft. east of Lake Ave., Fed. Aid Proj. 1-84-1 (7) Zero, Proj. 34-93, Danbury. CD 6/30.

BUILDINGS—LB & CA

▲ **Peachey Builders**, 283 Water St., Augusta, Me., CA **$1,350,000**, PLANT, BANGOR, ME. International Harvester Co., 146 Center St., Bangor, Me. Campbell Engineering Corp., 9215 Milwaukee Ave., Detroit, Mich., engrs.

Clifford Metal Sales Co., Inc., 63 Eagle St., Providence, R. I., cancelled bids to have opened July 16, SALES BLDG. West River Development, PROVIDENCE, R. I. Est. **$330,000**. CD 7/8.

Fairview Apartment, Inc., 567 Summer St., Stamford, Conn., CA **$660,000**, 132 unit APARTMENT, West Wooster St., DANBURY, CONN. Country Club Estates, Inc., 567 Summer St., Stamford, Conn. CD 3/10.

▲ **William Orenstein**, 255 5 Ave., New York, N. Y., Owner Builds **$1,439,200**, 80 HOUSES, "Radcliff Manor", Meadow Park Drive, MILFORD, CONN.

▲ **Barber & Stevens, Inc.**, 36 Woodland St., Hartford, Conn., Owner Builds **$1,836,000**, 135 HOUSES, "Kitemaug Orchard Home", New London Rd., MONTVILLE, CONN.

▲ **Litchfield County Homes, Inc.**, 187 Church St., Torrington, Conn., Owner Builds, **$4,000,000**, 400 HOUSES, Rte. 95, Burnett's Corner, MYSTIC, CONN.

▲ **Gilbane Building Co.**, 90 Calvary St., Providence, R. I., CA **$2,350,000**, 125,000 sq. ft. PRINTING PLANT, OLD SAYBROOK, CONN. R. R. Donnelley & Sons Co., 350 E. Cermak Rd., Chicago, Ill., Bids July 1, awarded July 20. CD 6/30.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
August 4 Maryland
STREETS AND ROADS
August 4 Maryland
August 27 New York

BUILDINGS—BA

▲ **N. J., Franklinville**—SCHOOL, etc.—BA 8/11—Southern Gloucester Regional High School Dist., Junior-Senior High School, sewerage sys. well. $1,750,000. Plans deposit $25. Micklewright & Mountford, 90 E. Stuyvesant St., Trenton, archts. CD 1/19.

▲ **N. Y., Stapleton**—HOUSES—BA 8/18—New York City Housing Auth., 299 Broadway, New York, Zone 7, (1) foundations and general constr. (2) heating and ventilating (3) electrical work (4) plumbing for Stapleton Houses, Proj. No. NYS-88, area bounded generally by Broad St., Tompkins Ave., Hill St., Warren St. and Gordon St., Richmond Boro. Plans deposit $75. CD 3/5/58.

▲ **Pa., Canonsburg**—INSTITUTION—BA 8/19—General State Auth., 18th and Herr Sts., Harrisburg, 784 bed institution for mentally retarded children, Phase I, Western Pa. State School and Hospital. $9,000,000. Plans deposit $100. Extended date. Celli-Flynn, 335 Shaw Ave., McKeesport, archts.-engrs. A. F. Jones, c/o owner, ch. engr. CD 7/7.

▲ **Del., Wilmington**—SCHOOL—BA About 9/23—Alfred I. duPont School Dist., Faulk Rd., Junior High School. $2,000,000. Whiteside, Moechkel & Carbonell, 909 Tatnall St., archts. CD 8/29/57.

BUILDINGS—SLC

▲ **Del., Dover**—PLANT—International Latex Corp., Playtex Park, soon lets contract process bldg. utility bldg., boiler plant. $1,250,000. A. H. Matts, P.O. Box 175, Fort Myers, Fla., archt. CD 7/1.

▲ **N. J., Princeton**—DORMITORIES, etc.—Princeton University, soon lets contract 5 dormitory bldgs. and social facilities bldg. $4,000,000. Sherwood-Mills & Smith, 65 Broad St., Stamford, Conn., archts. Werner, Jensen & Korst, 641 Summer St., Stamford, Conn., engrs. CD 4/1/58.

▲ **N. Y., Bayville**—HOSPITAL—Oyster Bay Hospital, soon lets contract 750,000 sq. ft. rein.-con. hospital conversion, alterations. $1,200,000. Michael W. Frudakis, 185 Montague St., Brooklyn, Zone 2, archts. Gennaro Mianulli, 185 Montague St., Brooklyn, Zone 2, engr. CD 3/3.

▲ **N. Y., Staten Island**—PRINTING PLANT—Staten Island Advance, 1267 Castleton Ave., soon lets contract 2 story, 50,000 sq. ft. printing plant, Fingerboard Rd., between Parkinson and Glendale Aves. $2,000,000. William Ginsberg Assocs., 331 Madison Ave., New York, N. Y. consult engrs. CD 5/8.

HEAVY CONSTRUCTION—LB & CA

▲ **Emerson Garden Electric Co., Inc.**, 485 Lexington Ave., New York, N. Y., LB **$2,802,576**, (8 bidders), 345 kv transmission line from Niagara Switchyard to Rochester Station, Niagara and Monroe Counties, No. PA 9-2 Contr. AL 2, NEW YORK, Power Authority of State of New York, The Coliseum Tower, 10 Columbus Circle, New York 19, N. Y. Bids July 21. CD 6/26.

▲ **NEW YORK**—State Dpt. P. Wks., State Office Bldg., Albany,

Mount Vernon Contg. Corp., & Colonial Asph. Paving Corp., 22 W. 1st St., Mount Vernon, N. Y., CA **$1,184,599**, est. $1,463,000. Interstate Rte. 520, West Expressway-Bloomingdale Rd. connection, Westchester Co. Bids June 25. Awarded July 15. CD 6/26, under LB.

▲ **Sovereign Constr. Co. Ltd.**, 1325, 17 St., Palisades, N. J., CA **$5,262,672**, Contr. 1 structures and equip. Hamilton Ave. Incinerator, Brooklyn Boro, BROOKLYN, N. Y. Dpt. P. Wks. Municipal Bldg., New York 7, N. Y. Bids June 3. Awarded July 17. CD 6/5, under LB.

† **Edward R. Marden Corp.**, 233 Harvard St., Brookline 46, Mass., LB **$865,700** (17 bidders), GAM 77 72 facilities, Griffiss Air Force Base, Serial No. ENG-30-075-59-252, ROME, N. Y. U. S. Eng., 111 E. 16th St., New York 3, N. Y. Bids July 8. CD 6/10.

▲ **NEW JERSEY**—State Hy. Dpt., 1035 Parkway Ave., Trenton,

J. F. Chapman & Sons, Inc., 1030 N. Broad St., Hillside, N. J., CA **$1,566,519**, grading, paving, bridges and relocation of oil line in connection with constr. of 2.022 mi. Rte. 169, Sect. 1, from Constable Hook to Point Breeze, Hudson Co. Bids June 25. CD 6/30, under LB.

▲ **NEW JERSEY**—State Hy. Dpt., 1035 Parkway Ave., Trenton, Bids opened 7/16,

Public Constructors, Inc., P.O. Box 247, Gloucester, N. J., LB **$2,758,050** (16 bidders), Interstate Rte. 80 bridge over Passaic River, between Paterson and West Paterson, Passaic and Bergen Counties. CD 6/25.

NEW JERSEY—State Hy. Dpt., 1035 Parkway Ave., Trenton, Bids opened 7/21,

Samuel Braen's Sons, 662 Goffle Rd., Hawthorne, N. J., LB **$831,652** (8 bidders), rehabilitation Rte. 10, Essex and Morris Counties. CD 7/6.

BUILDINGS—LB & CA

▲ **Joseph Davis, Inc.**, 120 West Tupper St., Buffalo, N. Y., CA **$1,697,433**, heating work for HEATING and REFRIGERATION PLANT (Bldg. No. 17) for State Office Bldg., ALBANY, N. Y. Henry A. Cohen, dir. Bureau Contracts, Dpt. P. Wks., State Office Bldg., Albany, N. Y. Bids June 10. CD 6/17, under LB;

Forest Electric Corp., 630 9th Ave., New York 19, N. Y., CA **$661,869**, electrical work for Heating and Refrigeration Plant Bldg. No. 17 for State Office Bldg. (Albany, N. Y.).

Peter A. Canelli & Sons, Pleasantville, N. Y., LB **$428,000**, SCHOOL for Sacred Heart Parish, DOBBS FERRY, N. Y. Archdiocesan Bldg. Comn., 451 Madison Ave., New York 22, N. Y. Bids July 9. CD 6/18.

▲ **LeChase Constr. Corp.**, 29 Saratoga Ave., Rochester, N. Y., CA **$1,358,719**, general contract HEALTH and PHYSICAL EDUCATION BLDG. (Bldg. 7), State University Teachers College, GENESEO, N. Y. Dpt. P. Wks. State Office Bldg., Albany, N. Y. Bids June 3. CD 6/17, under LB.

▲ **Siegfried Constr. Co.**, 7 North Pearl St., Buffalo, N. Y., CA Est **$6,000,000**, SHOPPING CENTER and MOTEL, Camp Rd. and Southwestern Blvd., HAMBURG, N. Y. Owner, c/o contractor.

▲ **Albar Assocs., Inc.**, 1449 Lexington Ave., New York 28, N. Y., Separate Contracts, **$2,150,000**, 16 story APARTMENT, incl. 60-car garage, 306-18 E. 96th St., NEW YORK, N. Y. Stanley Rapaport, 32 Union Square, New York 3, N. Y., archt. CD 5/22.

W. J. Barney Corp., 101 Park Ave., New York 17, N. Y., CA **$800,000**, 3 story Rhinelander BOYS' CLUB, First Ave. and East 88th St., NEW YORK, N. Y. Children's Aid Society, 105 E. 22nd St., New York 10, N. Y. Bids July 1. CD 6/23.

† **J. D. Constr. Co.**, 600 Westervelt Ave., Tenafly, N. J., CA **$942,200**, 58 unit Capehart HOUSING, Fort Totten (2), NEW YORK, N. Y. U. S. Eng., 111 E. 16 St., New York, N. Y. Bids Apr. 8, CD 4/10, under LB.

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $53,000, other public works $88,000, industrial buildings $110,000; other buildings $400,000. Also Foreign projects of $1,000,000 and more in size of interest to American contractors.

By Regions & Classes of Construction

(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED
New England
Middle Atlantic
South
Middle West
Mississippi to Rockies
Far West

PROPOSED WORK
Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Public Buildings
Mass Housing
Commercial Buildings
Industrial Buildings
Unclassified

In These Stages

PROPOSED WORK: Before and including appointment of engineers or architects.

BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.

SOON LETS CONTRACT: SLC

LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.

CD dates shown are of Construction Daily Issue in which last previous report was published.

OWNERS, ENGINEERS, ARCHITECTS, CONTRACTORS are invited to report their new jobs for listing in these reports when they meet or exceed the size minimums shown above. Address these news releases to J. A. Mahoney, REPORTS, ENGINEERING NEWS-RECORD, 330 W. 42 St., New York 36, N. Y.

Symbols and Abbreviations Include:

†	Federal Government
▲	Project of $1,000,000 or over
ENR	Engineering News-Record
CD	Construction Daily

For additional reports see Construction Daily.

▲ **Psaty & Fuhrman Inc.**, 369 Lexington Ave., New York 17, N. Y., CA **$8,401,000** 6 story PSYCHIATRIC UNIT, 1440-58 Madison Ave. and 20 East 100 St., southwest corner of Madison Ave. and 100 St., NEW YORK, N. Y. Mount Sinai Hospital, 5 Ave. and 100 St., New York, N. Y. Awarded May 27. CD 1/30/58.

▲ **Robert F. Hyland & Sons, Inc.**, 375 Averill Ave., Rochester, N. Y., CA Est. **$2,300,000**, TELEPHONE EXCHANGE and SERVICE CENTER, ROCHESTER, N. Y. Rochester Telephone Co., East Ave, Rochester, N. Y., Charles A. Pioch, 1136 Granite Bldg., Rochester, N. Y., archt.

▲ **Avella Constr. Co.**, 215 E. 149th St., New York, N. Y., CA **$1,740,623**, general contract JUNIOR HIGH SCHOOL, Peninsula Blvd. west of Mill Rd., WOODMERE, N. Y. Bd. Educ. Dist. 14, Woodmere, N. Y. CD 1/22.

▲ **Bryan Constr. Co.**, 171 River Rd., North Arlington, N. J., LB **$2,080,000**, HIGH SCHOOL, MONTCLAIR, N. J. Town, Town Hall, Montclair, N. J. CD 10/2.

▲ **Mastapeter Builders**, 317 Amity St., Elizabeth, N. J., CA **$1,500,000**, 50 HOUSES, Wedgewood Place, off Speedwell Ave., MORRIS PLAINS, N. J. Wedgewood Acres, Inc., 317 Amity St., Elizabeth, N. J. Peter Grygotis, 306 Aldene Rd., Roselle, N. J., archt.

Romagnino Constr. Co., 389 George Rd., Cliffside Park, N. J., CA **$871,700**, general contract JUNIOR HIGH SCHOOL, Roosevelt Blvd., PARAMUS, N. J. Bd. Educ., Paramus, N. J. Bids July 9. CD 7/15, under LB.

▲ **Dunlap Holding Co.**, c/o Edward E. Freit, Laurelton, N. J., Separate Contracts, Over **$1,000,000**, RESIDENTIAL DEVELOPMENT (80), Hooper Ave., etc., TOMS RIVER, N. J.

▲ **New Jersey Post Constr. Co.**, 8150 Union Ave., Pennsauken, N. J., LB **$1,135,000**, HIGH SCHOOL, Crown Point Rd., WOODBURY, N. J. West Deptford Twp. Bd. Educ., Woodbury, N. J. Bids July 7. CD 6/17.

▲ **Arthur A. Kober Co.**, 9 Union Ave., Bala Cynwyd, Pa., CA **$3,250,000**, 175 units Sutton Terrace APARTMENTS and underground GARAGE, BALA CYNWYD, PA. Denny Bldg. Corp., 4203 Fairdale Rd., Phila., Pa. Samuel I. Oshiver & Assocs., 1425 Walnut St., Phila., Pa., archts.-engrs. CD 1/30/57.

▲ **Frank H. Wilson Co.**, 125 Coulter St., Ardmore, Pa., CA **$1,508,570**, general constr. SENIOR HIGH SCHOOL, DOWNINGTOWN, PA. Downingtown Joint High School Auth., 335 Manor Ave., Downingtown, Pa. Bids June 25. CD 7/1, under LB.

▲ **Fox Built Homes**, 2098 Butler Pike, Plymouth Meeting, Pa., Separate Contracts, **$1,800,000**, RESIDENTIAL DEVELOPMENT (100), HORSHAM, PA.

▲† **Ambrose Augusterfer Corp.**, 247 E. Ashmead St., Phila., Pa., CA **$2,098,000**, OFFICE addn. and air-conditioning, 18th and Locuust Sts., PHILA. PA. General Services Admin., 18th and F Sts. N. W., Wash., D. C., Cronheim & Weger, 220 S. 16th St., Phila., Pa., archts.-engrs. CD 9/2.

▲ **Crump, Inc.**, 4031 Bigelow Blvd., Pittsburgh, Pa., CA **$1,328,900**, NURSES HOME and DIETARY KITCHEN, PITTSBURGH, PA. South Side Hospital, S. 20th and Jane St., Pittsburgh, Pa. CD 6/2/58.

Crump, Inc., 4031 Bigelow Blvd., Pittsburgh, Pa., CA **$897,000**, men's DORMITORY, PITTSBURGH, PA. Carnegie Institute of Technology, Schenley Park, Pittsburgh, Pa. Awarded July 21. CD 6/16.

Mellon Stuart Co., 210 East Parkway, Pittsburgh, Pa., CA Over **$500,000**, CHURCH, PITTSBURGH, PA. Immaculate Conception Parish, 333 Edmond St., Pittsburgh, Pa. Bids July 15. CD 7/9.

▲ **Merando, Inc.**, 4098 Minnesota Ave. N.E., Wash., D. C., CA **$2,352,957**, Spring Brook HIGH SCHOOL, Silver Spring, ROCKVILLE, MD. Montgomery Co. Bd. Educ., Rockville, Md. Bids June 25. CD 6/29, under LB.

Di Sabatino & Raniere, Inc., 2000 Rodman Rd., Wilmington, Del., LB **$803,746**, OFFICE, 1800 W. 4 St., WILMINGTON, DEL. Integrity Finance Corp., 1807 W. 4 St., Wilmington, Del. Leon N. Fagnani, 1109 Jefferson St., Wilmington, Del., archt. Louis H. Doane, Penna. R.R. Bldg., Wilmington, Del., engr.

SOUTH

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

STREETS AND ROADS

August 7 Kentucky

BUILDINGS—BA

▲ **Ky., Berea**—ALUMNI, etc.—BA 8/18—Berea College (selected list of bidders), 3 level, 50,000 sq. ft. rein.-con., brick built-up roof, alumni and 15,000 sq. ft. dormitory. $1,300,000. Hartstern, Louis & Henry, McDowell Bldg., Louisville, Zone 2, archts. E. R. Ronald & Assoc., 554 S. 3rd St., Louisville, Zone 2, engrs. CD 4/9, under LB.

HEAVY CONSTRUCTION—LB & CA

▲ **VIRGINIA**—Cheseapeake Bay Ferry Dist. Comn., Box 120, Norfolk,

Merritt-Chapman & Scott Corp., 261 Madison Ave., New York, N. Y., **Peter Kiewit & Sons**, 1024 Omaha National Bank Bldg., Omaha, Neb., **Raymond International, Inc.**, 140 Cedar St., New York, N. Y., & **Tidewater Constr. Corp.**, 538 Front St., Norfolk, Va., CA Approx. **$126,000,000**, causeways and 2 tunnels. (Contract of approx. $2,000,000 for two

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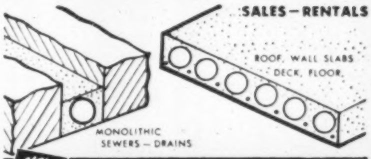

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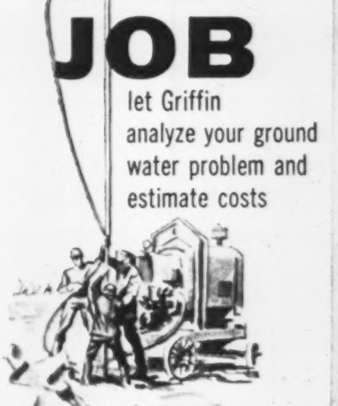

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bridges to American Bridge Div. of U. S. Steel, Roanoke, Va.) constr. Chesapeake Bay Bridge-Tunnel Proj. between Little Creek Va. and Kiptopeake Va. subject to sale of $202,000,000 bonds. CD 9/17/56.

▲ **Boyd & Goforth**, Pineville Rd., Charlotte, N. C., LB **$900,211**, sanitary sewer imprvs., Area 2, CHARLOTTE, N. C. City, City Hall, Charlotte, N. C., Bids July 16, CD 7/2;
A. P. White Assocs., 222 Lotta Arcade, Charlotte, N. C., LB **$801,223**, sanitary sewer imprvs., Area 3, (Charlotte, N. C.);
Blythe Bros. Constr. Co., 2911 Hutchinson Ave., Charlotte, N. C., LB **$816,519**, sanitary sewer imprvs., Area 1, (Charlotte, N. C.)

▲ **SOUTH CAROLINA**—State Hy. Dpt., Hotel Wade, Hampton, Columbia, Bids opened 7/14,
S. C.—**Robert E. Lee & Co., Inc.**, Manning, S. C., LB **$1,519,764**, (7 bidders), drainage, etc. 9.051 mi. Int. Rte. 26, S.C. Docket No. 8.353, F.A. Proj. I 26-4 (1), Berkeley Co.; LB **$168,594**, (6 bidders), bit. surf. 14.754 mi. Rds. S-221, S-222, S-226, S-127, S-224, S-265, S-116, S-234, S-235, S-236, S-237, S-142, S-209, S-196, S-93, S-228 & S-349, S.C. Docket No. 14.341, Clarendon Co.;
S. C.—**Southern Roadbuilders, Inc.**, 2312 Ada Ramp Walden Rd., Augusta, Ga., LB **$1,783,227**, Alt. 2, (5 bidders), c. conc. 9.812 mi. for 4 lane divided hy. Int. Rtes. 126 and 26 from Columbia to US Rte. 76 near Irmo, S.C. Dockets Nos. 32.386.2 and 40.444.2 F.A. Projs. Nos. I-IN-26-2 (2) & I-IN-126-2 (34), Lexington and Richland Counties. CD 7/2.

Wright Contg. Co., Inc., Box 1580, Columbus, Ga., CA **$646,307**, sewerage system imprvs., Contract A, Divisions 1 and 2, Fulton Co., ATLANTA, GA. Comrs. Roads & Revenues, Admin. Bldg., Atlanta, Ga. Bids June 18. CD 6/24, under LB.

▲ **FLORIDA**—State Rd. Dpt., Tallahassee,
Fla.—**Smith Constr. Co. of Florida**, Drawer 1831, Pensacola, Fla., CA **$978,997**, 4-lane highway facility grading, surf. tr. sand asph. hot mix pavement leveling court b. conc. surf. course, etc. 3.808 mi. Fed. Aid Proj. No. S 526 (1), Job No. 4820-3114 SR 10, Escambia Co., awarded July 17;
Fla.—**Coggin & Deermont**, Chipley, Fla., CA **$1,039,279** 4-lane single and dual roadway surf. tr., concrete surf. course with binder course underpass, storm sewers, etc. 2.403 mi. State Proj. Job No. 5506-3205, SR 10 U.S. 90, Leon Co., awarded July 17;
Fla.—**Dunn Constr. Co.**, 2508 3 Ave. North, Birmingham, Ala., CA **$1,035,545**, 4-lane b. conc. surf. course and binder course, drainage structures, bridges concrete slab deck on prestressed concrete piles and composite concrete and steel pipe bents, 2.808 mi. State Proj. Job No. 17020-3203 SR 45 Tamiami Trail, Sarasota Co., awarded July 17;
Fla.—**Wiley N. Jackson Co.**, Box 1408, Roanoke, Va., CA **$2,888,351**, excavation 4- and 6-lane divided limerock base, concrete surf. course and binder course limerock base shoulders, surf. tr., drainage structures FAI Proj. No. 1-4-2 (15) 93, Job No. 75280-3404 and State Job No. 75270-3501 SR 300, Orange Co., awarded July 16;
Fla.—**W. & M. Constr. Co.**, Williston, Fla., CA **$714,743**, 4-lane limerock base b. conc. surf. course and binder course drainage structures, concrete slab deck bridge 3.01 mi. Fed. Aid Proj. No. F-002-2 (19), Job No. 12230-3101 SR 25, Lake Co., awarded July 16. Grand total $6,626,915. Bids June 23. CD 6/26, under LB.

▲ **FLORIDA**—State Rd. Dpt., Tallahassee,
Fla.—**Cleary Bros. Constr. Co.**, Box 6397, West Palm Beach, Fla., CA **$567,027**, embankment sand bit. road mix pavement surf. tr., 2 bridges, 2.481 mi., State Proj. Job No. 78030-3111 SR A-A, St. Johns Co.;
Fla.—**Ronlee, Inc.**, 3907, N. W. 27 Ave., Miami, Fla., CA **$1,197,522**, limerock base, b. conc. surf. course and binder course slab deck bridge 5.756 mi. Fed. Aid Proj. No. S-495(2) Job No. 87070-3501 SR 27, Dade Co.;
Fla., **R. H. Wright, Inc.**, Fort Lauderdale, Fla., CA **$1,839,607** excavation 8-lane c. conc. pavement limerock base, surf. tr. limerock base conc. surf. course with binder course concrete retaining wall, on precast concrete piling, bridge, FAI Proj. No 1-95-1 (11) 5 Job No. 87270-SR 9, Dade Co Bids June 23, awarded July 20, Grand total $2,604,156. CD 6/26, under LB.

▲ **FLORIDA**—State Rd. Dpt., Taiahassee,
Fla.—**Hubbard Constr. Co.**, Box 7217, Orlando, Fla., CA **$778,716**, 4-lane divided 8½ in. limerock base SR 438 in Winter Park and Seminole Co. Line, Fed. Aid Proj. Nos. JU-070-1 (9) and UG-101-1 (8), Job Nos. 750-30-3205 and 75030-3502 SR 15 and 600 Orange Co., awarded July 17;
Fla.—**W. L. Cobb Constr. Co.**, Box 977, Tampa 1, Fla., CA **$1,306,718** 4-lane 8½ in. limerock base with Type B conc. surf. course and binder course, SR 5 (US 1) between south city limit of Rockledge and north city limits of Cocoa, Fed. Aid Proj. No. F-003-5 (6), Job No. 70020-3275, Brevard Co. Bids Jan. 29, awarded July 17. CD 2/3, under LB.

▲ **ALABAMA**—State Hy. Dpt., Montgomery,
Ala.—**Asburn & Gray, Inc.**, S. Memorial Parkway, Box 921, Huntsville, Ala., CA **$699,639** base and bit. on Athens-Huntsville Rd. 16.9 mi. Limestone and Madison Counties;
Ala.—**Ed. Bentley Contractor**, Sylacuga, Ala., CA **$1,396,395**, grading, draining U. S. 280 from Birimingham water works filter plant S. E. toward Childerburg 3.7 mi. Jefferson and Shelby Counties;
Ala.—**McDowell & McDowell**, 718 Murfressboro Rd., Nashville, Tenn., CA **$1,787,503**, grading, draining 9.362 mi. between St. Clair Springs and Whitney Inter. Rte. 59, St. Clair Co.;
Ala.—**North Alabama Dirt Mover, Inc.**, Cleveland, Ala., CA **$1,666,373**, grading draining and bit. pavement and bridge U. S. 231 from Dothan S. to Florida State Line 9 mi. roadway Houston Co., Grand total $5,549,909. Bids June 19. CD 6/26, under LB.

▲ **ALABAMA**—State Hy. Dpt., Montgomery, Zone 3,
Ala.—**Goodwayn & Murphree, Inc.**, Troy, Ala., CA **$735,242** underpasses and overpasses from Chilton Co. Line, Interstate Rte. 65, Shelby Co.;
Ala.—**Laidlaw Constr. Co.**, Wolf Ridge Rd., Mobile, Ala., CA **$858,458**, overpass and approaches over GM 80 R.R., U.S. 98, Mobile, Mobile Co.;
Ala.—**Wright Constr. Co.**, Brookhaven Rd., Columbus, Ga., CA **$534,179** bridges and overpasses from W. of Eden to Riverside on Inter. Rte. 20, St. Clair Co. Grand total $2,127,879. Bids June 19. CD 6/26.

▲ **Louisville & Jefferson County Air Bd., Lee Terminal** Standiford Field, Louisville, Ky., rejected bids June 3, Lee Terminal Standiford Field Addns., LOUISVILLE, KY. CA **$2,448,000**. (**Correction**—status). CD 6/5, under CA.

▲ **LOUISIANA**—State Hy. Dpt., Rm. 307, Hy. Office Bldg., Baton Rouge,
A. P. Johnson, Greenwall Springs Rd., Baton Rouge, La., CA **$1,352,578**, aggreg. type base course 5.61 mi. Port Hudson-Starhill Hy., Rte. LA-US 61. SP Nos. 19-02-14, 19-03-12 and 19-04-21 FAP No. F-81(7) East Baton Rouge, East Feliciana and West Feliciana Parishes. Bids June 17. CD 6/24, under LB.

H. B. Fowler & Co., Box 213, Harvey, La., CA **$914,998**, shipping gallery and related work at Public Grain Elevator, NEW ORLEANS, LA. Port of New Orleans, 2 Canal St., New Orleans, La. Bids May 19. CD 6/2, under LB.

† **Anderson & Gore Constr. Co.**, 407½ Union St., Nashville, Tenn., CA **$874,718**, Wherry Housing remodeling and alterations, DA-15-056-59-116, FORT CAMPBELL, KY. Purchasing & Contracting Officer, Fort Campbell, Ky. Bids June 23, awarded July 15. CD 6/29, under LB.

▲ **TENNESSEE**—State Hy. Dpt., Nashville,
Tenn.—**Oman Constr. Co.**, Acklen Park, Nashville, Tenn. CA **$3,324,043**, paving with bit. materials (plant mix) and c. conc. constr. 8 prestressed concrete box beam bridges, 1.937 mi. Int. Rte. 75. Proj. I-75-1 (7) 0, Hamilton Co., CA **$1,128,121**, grading, 4 concrete steel bridges, bit. materials (plant mix) c. conc. 0.448 mi. State Rte. No. 27 Spur Proj. U 02701 (4), Hamilton Co.;
Tenn.—**John L. Burns, Inc.**, 2720 Nolensville Rd., Nashville, Tenn., CA **$1,364,484**, grading, drainage, 4 bridges, 6.451 mi. Int. Rte. No. 40, Proj. I 40-3 (12) 179, Dickson, Williamson and Cheatham Counties;
Tenn.—**S&W Constr. Co.**, 2630 Midland Ave., Memphis, Tenn., CA **$2,940,241**, c. conc. paving 10 bridges 3.464 mi. Int. Rte. 55, Proj. I 55-1 (5) 0, Shelby Co.;
Tenn.—**Roadbuilders, Inc.**, 718 Murfreesboro Rd., Nashville, Tenn., CA **$1,262,826**, paving with bit. materials relocated section near Una and widening roadway drainage structures, widening and resurf. addnl. miles 2 lane pavement to 4 lanes with bit. materials (plant mix) 7.533 mi. State Rte. No. 1, Proj. SP-1133-A, Davidson Co. Grand total $10,019,024. Bids June 26. CD 7/6, under LB.

▲ **TENNESSEE**—State Hy. Dpt., Nashville,
rejected bids June 26, concrete, steel bridge (65 ft. wide between curbs) and approaches across Clinch River, section Int. Rte. No. 40 west of Kingston. Proj. I 40-6 (13) 351, Roane Co. LB **$2,420,587**. CD 7/6, under LB.

BUILDINGS—LB & CA

▲† **Virginia Engineering Co.**, 80-29th St., Newport News, Va., CA **$2,527,000**, constr. (except elevators) United States FEDERAL OFFICE, incl. U. S. Post Office Appr. No. 47x1147, Proj. 44093, Contr. No. GS-R3-B-6440, PORTSMOUTH, VA. Public Buildings Service, Regional Office Bldg., General Services Admin., 7th and D Sts. S.W., Wash. 25, D. C. Bids June 2. CD 6/12, under LB.

▲ **Little Constr. Co.**, 1327 E. Boulevard, Charlotte, N. C., CA **$3,813,048**, general contract HOSPITAL addn., CHARLOTTE, N. C. Memorial Hospital, Scott Ave., Charlotte, N. C. Bids June 24, awarded July 16. CD 7/6, under LB.

Robert H. Pinnix, Box 97, Gastonia, N. C., CA **$991,430**, MOTOR FREIGHT TERMINAL, CHARLOTTE, N. C. Akers Motor Lines, Inc., New Hope Rd., Gastonia, N. C. CD 6/25, under LB.

▲ **George W. Kane**, 111 Corcoran St. Bldg., Durham, N. C., CA Est. **$1,000,000**, RESEARCH LABORATORY addn., DURHAM, N. C. Liggett & Myers Tobacco Co., Main St., Durham, N. C. Lockwood & Greene Engineers, Inc., Montgomery Bldg., Spartanburg, S. C., engr.-archt. CD 2/11.

▲ **Abco Builders, Inc.**, 90 Rogers St. N. E., Atlanta, Ga., CA **$2,872,000**, ELECTRICAL ENGINEERING BLDG., ATLANTA, GA. University System Bldg. Auth., 244 Washington St. S. W., Atlanta, Ga. Bids July 7. CD 7/15, under LB.

▲ **Beers Constr. Co.**, 70 Ellis St. N.E., Atlanta, Ga., LB **$1,585,000**, HOSPITAL addn., Eugene Talmadge Memorial Hospital, AUGUSTA, GA. University System of Georgia Building Auth., 244 Washington St. S.W., Atlanta, Ga. Bids July 15. CD 6/12.

Hanover Corp., 1555 Daytonia Rd., Miami Beach, Fla., CA **$800,000**, three 162 units, 1 and 3 story, 224x224 CB-S L-shaped 2 and 3 story, 60x200 CB-S APARTMENTS, West Dr., North Bay Village, MIAMI BEACH, FLA. Beaux Arts Apartment, c/o G. M. Fein, archt., 1048 Kane Concourse Bay, Harbor Islands, Fla. Sloan Engineers & Assocs., 1644 NE 123 St. N., Miami, Fla., structural engrs. Weiss & Hertz, 2904 Salzedo St., Coral Gables, Fla., mechanical engrs.

▲ **Zaret Building Corp.**, 924 Lincoln Rd., Miami Beach, Fla., CA **$2,500,000**, APARTMENT, incl. swimming pool, 4900 Collins Ave., MIAMI BEACH, FLA. Charles Martel & Ben Cohen, 420 Lincoln Rd., Miami Beach, Fla. Sloan Engineering & Assocs., 666 N.E. 125 St. N., Miami, Fla., structural engrs. Hertz & Weiss, 2904 Salzedo St., Coral Gables, Fla., electrical engrs. Awarded July 8. CD 6/2.

▲ **Dyson & Co.**, 806 W. Ramano St., Pensacola, Fla., CA **$1,664,400**, Escambia General HOSPITAL, PENSACOLA, FLA. Bd. Comrs. Escambia County, Courthouse, Pensacola, Fla. Bids June 3, awarded July 14. CD 6/11, under LB.

J. P. Cross Co., 7217 Gulf Blvd., St. Petersburg Beach, Fla., CA Est. **$600,000**, APARTMENT, ST. PETERSBURGH BEACH, FLA. Sunset Plaza Apartments, c/o contractor.

▲ **Frank J. Rooney, Inc.**, 5880 NE 4 Ave., Miami, Fla., LB Approx. **$1,000,000**, RETAIL STORE, Washington St. and Bahia Vista St., SARASOTA, FLA. Sears, Roebuck & Co., First National Bank, Sarasota, Fla. Bids July 16. CD 7/7.

▲ **Winchester Constr. Co.**, 1537 Spruce St., Tallahassee, Fla., CA **$1,552,504**, College HOUSING, State University, Proj. FLA-1-CH-25(D), TALLAHASSEE, FLA. Florida State Bd. Control, Florida State University, Tallahassee, Fla. Bids June 23, awarded July 14. CD 7/1, under LB.

▲ **Paul Smith Constr. Co.**, 310 Rome Ave., Tampa, Fla., CA **$1,575,000**, POLICE HEADQUARTERS, Estelle and Tampa Sts., TAMPA, FLA. City, City Hall, 3rd floor, Tampa, Fla. Bids June 23. CD 7/1, under LB.

▲ **Paul Smith Constr. Co.**, 310 N. Rome Ave., Tampa, Fla., CA **$1,500,000**, 110,000 sq. ft. SHOPPING CENTER, TAMPA, FLA. Eastgate of Tampa, Inc., c/o contractor.

Meadow Corp., 88 S. Boulevard, Montgomery, Ala., Own Forces, **$800,000**, Westwood RESIDENTIAL DEVELOPMENT, DECATUR, ALA.

Valley Realty Co., 1811 Shade Ave, Florence, Ala., Separate Contracts, **$800,000**, 83 RESIDENCES, Belview Subdivision, TUSCUMBIA, ALA.

Barnet Brezner, P.O. Box 1030, Alexandria, La., CA **$631,200**, 63,433 sq. ft. with add. 10,548 sq. ft. aluminum covered walkways, Lincoln Road JUNIOR HIGH SCHOOL, ALEXANDRIA, LA. Rapides Parish School Bd., Alexandria, La. C. Scott Yeager & Assocs., 205 Lee St., Alexandria, La., archts. Bids June 10, awarded June 24. CD 6/17, under LB.

Southland Constr. Co., Bogalusa, La., CA **$863,470**, 3 ELEMENTARY SCHOOLS, BOGALUSA, LA. City School Bd., Bogalusa, La. Bids July 9, awarded July 13. CD 6/9.

Gervais Favrot Co., 330 Balter Bldg., New Orleans, La., CA **$942,686** general contract 4 story addn., limited changes to existing HOSPITAL, NEW ORLEANS, LA. Flint Goodridge Hospital, Louisiana Ave. and LaSalle Sts., New Orleans, La. Bids May 26. CD 6/3, under LB.

▲ **Foster & Creighton Co.**, 824 American National Bank Bldg., Nashville 3, Tenn., CA **$1,714,000**, Phase II, constr. bldgs. and partial facilities, TIRE MANUFACTURING PLANT, MAYFIELD, KY. City, City Hall, Mayfield, Ky. General Tire Co., lessee. Bids July 14. (**Correction**—cost). CD 7/20, under LB.

H. R. John Co., 1112 East Broadway, Louisville 4, Ky. LB **$872,316**, MARRIED STUDENTS HOUSING, Morehead State College, MOREHEAD, KY. Commonwealth of Kentucky, Div. Purchases, Frankfort, Ky. Bids July 16. CD 7/8.

▲ **Girdler Constr. Div. Chemetron Corp.**, Commonwealth Bldg., Louisville, Ky. CA design and construct high-purity HYDROGEN PLANT to produce polyester fiber, KINGSPORT, TENN. Tennessee Eastman Co., (Div. Eastman Kodak Co.), Kingsport, Tenn. CD 7/1, under CA.

▲ **Foster & Creighton**, 1st American National Bank, Nashville, Tenn., LB **$1,395,000**, 155 unit MOTEL, Capitol Hill area, NASHVILLE, TENN. Capitol Park Corp., 410 Union St., Nashville, Tenn. CD 2/4.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

STREETS AND ROADS

August 12, 19 Michigan

▲ **Ill., Chicago**—BA 8/3—Dpt. Purchases, City Hall, Spec. 86.68 59-15, paving, grading Northwest Expressway Division St. to North Ave. $1,750,000. Dick Van Gorp, 320 N. Clark St., Zone 10, ch. engr. CD 2/4.

▲ **Ill., Chicago**—BA 8/12—Dpt. Purchases, City Hall, Zone 2, No. 80.391-59-2, wash water piping, Central Dist. Filtration Plant. $2,500,000. George S. Salter, 320 N. Clark St., ch. filter engr. CD 1/12.

BUILDINGS—BA

▲ **O., Columbus**—NURSES HOME—BA 8/6—White Cross Hospital Assn. of Ohio, 700 N. Park St., nurses home, $1,250,000. Plans deposit $100. C. Curtis Inscho, 60 E. Broad St., archt.

O., New Miami—SCHOOL—BA 8/12—New Miami Bd. Educ., high school, $900,000. David B. Maxfield, 111 W. High St., Oxford, archt. CD 6/22, under LB.

Ill., **Waukegan** — SCHOOLS — BA 8/13 — Bd. Educ., School Dist. 61, 574 McAlister Ave., Glenwood and Oakdale School addns., alterations, **$674,000.** Plans deposit $15. Ganster & Henninghausen, 222 Washington St., archts. CD 3/17.

▲ **Mich., Grand Haven**—POWER PLANT—BA 8/18—City, City Hall, power plant substructure at site, municipal electric plant. Lutz & May Co., 819 Finance Bldg. Kansas City 5, Mo., consult. engr. CD 3/7/58.

BUILDINGS—SLC

Ill., **Des Plaines**—Y.M.C.A.—Young Mens Christian Assn., 19 S. LaSalle St. Chicago, soon lets contract, 2 story, 25 x 75 ft., 20 x 40 ft., 55 x 90 ft., brick gymnasium and physical training bldg. $875,000. E. B. White, 19 S. LaSalle St., Chicago Zone 3, archt. CD 5/10/57.

HEAVY CONSTRUCTION—LB & CA

▲ **OHIO**—Dpt. Hys., State Dpt., Bldg., Columbus,

O.—**The DeSalvo Constr. Co.**, 3701 Red Bank Rd., Cincinnati, O., CA **$1,113,000,** Type T-35 on B-219 and structures 4.935 mi. USR 127-2.57 Village of Camden, Proj. 281, Preble Co.;

O.—**The Great Lakes Constr. Co.** and **National Engineering & Contracting Co.**, Box 2278, Brooklyn Sta., Cleveland, O., CA **$709,441,** Type T-71 and structure 0.927 mi. USR 62-22.82, FU-978(6), City of Canton, Proj. 251, Stark Co.;

O.—**John G. Ruhlin Constr. Co.**, 1024 Home Ave., Akron, O., CA **$1,673,538,** Type T-71 and structures 1.766 mi. SR 93-9.13 US-USG-698(4), City of Akron, Proj. 252, Summit Co.;

O.—**Victory Constr. Co.**, 5735 No. Dixie Dr., Dayton, O., CA **$583,159,** Type T-70, T-35 and structures 2.993 mi. SR 66-1.50, 0.00 F-462(9), Proj. 249, Miami and Shelby Counties;

O.—**The Horvitz Co.**, 4375 E. 146th St., Cleveland, O., CA **$3,712,640,** Type T-71 and structures 3.984 mi. Cities of Willoughby and Eastlake, SR 2-4.42 F-U-Ug-329 (15), Proj. 256, Lake Co.;

O.—**C. F. Replogle Co.**, P. O. Box 308, Circleville, O., CA **$3,291,858,** Type T-71 and structures 2.448 mi. USR 52-5.99, U-UF-UG-393(6) U-F-421 (8), City of Ironton, Proj. 247, Lawrence Co.;

O.—**National Engineering & Contracting Co.** and **Great Lakes Constr. Co.**, 1968 W. Third St., Cleveland, O., CA **$1,144,589,** Type T-71 and structure 0.485 mi. SR 57-18.02, U-602 (15) City of Elyria. Proj. 248, Lorain Co.;

O.—**Rhoten Constr. Co.**, 16 E. Broad St., Columbus, O., CA **$729,900.** Type T-35, 9.227 mi. USR 30S-(16.71-21.46), City of Kenton, Proj. 267, Hardin Co. Grand total $12,958,095. Bids June 30. CD 7/16, under LB.

▲ **Groves Ventures Co.**, P. O. Box 98, New Richmond, O., CA **$25,216,378,** (contract assigned) New Richmond Locks and Dam, Ohio River, near Chilo, OHIO AND KENTUCKY. U. S. Eng., 237 4th Ave., Huntington 18, W. Va. CD 4/3/59, under CA.

▲ **Santucci Constr. Co.**, 5025 Church St., Skokie, Ill., LB **$1,745,389,** est. $2,000,000 (5 bidders), Divs. 27A and 27B combined relief sewers, Robertsdale area; LB **$105,268,** Div. 30, storm sewers HAMMOND, IND. Hammond Sanitary Dist., 5143 Columbia Ave., Hammond, Ind. Bids July 16. CD 6/25;

Calumet Constr. Corp., 1247 169 St., Hammond, Ind. LB **$1,190,896** (5 bidders), Div. 25, sewerage treatment plant addn., storm sewer pump equipment; LB **$289,960,** est. $300,000 (3 bidders), Div. 29, Forsyth pump station (Hammond, Ind.);

Hasse Constr. Co., Inc., Lincoln and Plummer Aves., Calumet City, Ill., LB **$199,803** (2 bidders), Div. 26-2, Kennedy Ave. sanitary sewers (Hammond, Ind.).

▲ **ILLINOIS**—Dpt. P. Wks. & Bldgs., Div. Hys., Centennial Bldg., Springfield,

Ill.—**Palumbo Excavating**, 2738 W. Harrison, Chicago 12, Ill. CA **$1,375,911,** paving and retaining walls on Congress St. Expressway (FAI 90) Cook Co.;

Ill.—**Triangle Constr. Co.**, 480 N. Evergreen Ave., Kankakee, Ill., CA **$910,500,** base course wid'n. 0.87 mi., earth shoulders 2.13 mi., widen 1.22 mi., base course 0.76 mi., 1 WF beam bridge, all on US 45, Massac Co.;

Ill.—**R. B. Potashnick & Regenhardt Constr. Co.**, Hy. 74 South, P.O. Box 423, Cape Girardeau, Mo., CA **$525,347**, paving 5.46 mi., 1 grade separation structure, 1 box culvert, all on Interstate 57, Johnson and Williams Counties. Bids July 2. Awarded July 21. Grand total $2,811,758. CD 7/7, under LB.

▲ **Corbetta Constr. Co., Inc.**, 208 S. LaSalle St., Chicago 4, Ill., LB **$1,610,500,** est. $600,000 (13 bidders) substructures for 2 terminal bldgs., O'Hare International Airport, Contr. RB-4, Spec. 80.85-59-101, CHICAGO, ILL. Dpt. Purchases, City Hall, Chicago 2, Ill. Bids July 10. CD 6/25.

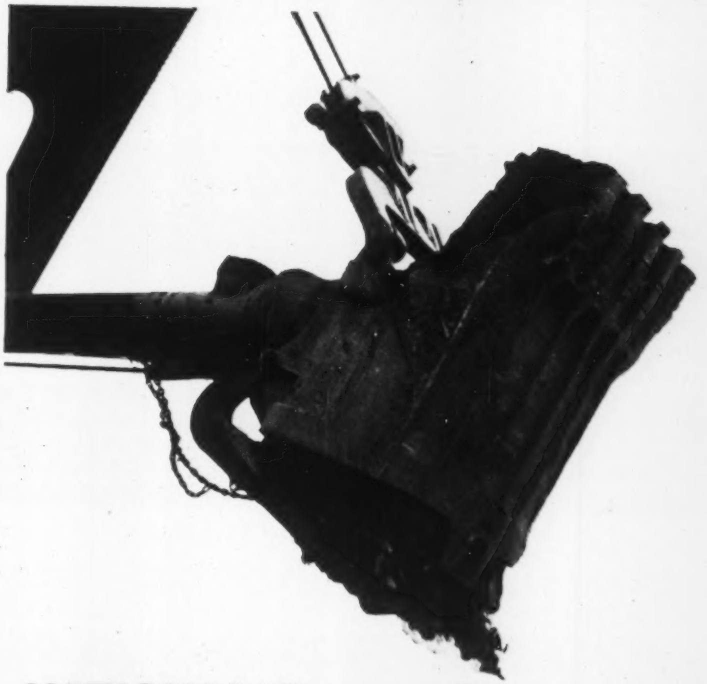
▲ **Standard Paving Co.**, 308 W. Washington St., Chicago 6, Ill., CA **$2,288,138**, No. 80.68-59-4, paving, grading Northwest Expressway, Ogden Ave. to Division St., CHICAGO, ILL. Dpt. Purchases, City Hall, Chicago, Ill. Awarded June 30. CD 7/2, under LB.

▲ **MICHIGAN**—State Hy. Dpt., Escanaba, Bids opened 7/15,

Mich.—**Gilliland Constr. Co.**, 422 Washington Ave., Alpena, Mich., LB **$3,396,552,** 4 mi. US 2, St. Ignace bypass north of Mackinac bridge incl. two grade separations, St. Ignace, Mackinac Co.;

Mich.—**Alpine Constr. Co.**, 245 Marquette Ave., St. Ignace, Mich., LB **$349,876,** bit. aggreg. surf. 9.5 mi. M 123 north from M 28, Chippewa Co.;

Mich.—**Caspian Constr. Co.**, Caspian, Mich., LB **$344,544**, grading, drainage structures 5.9 mi. M 95-M 69 north from Randville, Dickinson Co. CD 7/8.



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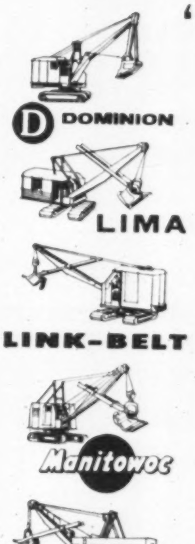

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TWO GATEWAY CENTER, PITTSBURGH 22, PENNSYLVANIA

▲ **MICHIGAN**—State Hy. Dpt., Mason Bldg., Lansing, **Gilliland Constr. Co.**, R 2, Alpena, Mich., CA **$3,396,552**, (6 bidders) grading, drainage structures, dual 24 ft. concrete pavement and 2 bridges 4.08 mi. US 2 from interchange N. of Mackinac Bridge northerly, Mackinac Co. Bids July 15. Awarded July 21. CD 7/20, under LB.

▲† **F. D. Rich Co., Inc.**, 550 Summer St., Stamford, Conn., LB Est. **$1,689,644**, hospital, K. I. Sawyer Air Force Base, ENG-20-064-59-83, MARQUETTE, MICH. U. S. Eng., 1101 Washington Blvd., Detroit 31, Mich. Bids July 10. CD 6/18.

BUILDINGS—LB & CA

▲ **Brennan Assocs., Inc.**, c/o J. S. Wald & Assocs., engrs., 2565 Galbraith Rd., Cincinnati, O., Own Forces, **$5,000,000**, 350 brick HOMES, Crescentville Rd., Crescentville, CINCINNATI, O.

▲ **Hunkin-Conkey Constr.**, 1740 E. 12th St., Cleveland 14, O., CA Est. **$2,200,000** (6 bidders), general contract 300,000 sq. ft. BRANCH STORE, Parmatown Shopping Center, PARMA, O. The May Co., Euclid Ave. and Ontario St., Cleveland 14, O. Bids June 15, awarded July 16. CD 5/21.

† **Abbot Constr. Co.**, 5789 N. Lincoln Ave., Chicago, Ill., CA **$879,000**, install MAIL-FLOW SYSTEM, 8th and 9th floor, Main Post Office, CHICAGO, ILL. General Services Admin., 219 S. Clark St., Chicago, Ill. Bids June 23, awarded July 10. CD 6/30. under LB.

Bank Building Corp., 1132 Hampton Ave., St. Louis Mo., CA **$600,000**, 62 x 123 ft. BANK, CHICAGO, ILL. Amity Federal Savings & Loan Assn., 6910 S. Halsted St., Chicago, Ill. Awarded July 18.

▲ **Campbell Lowrie Lautermilch Corp.**, 400 W. Madison St., Chicago 6. Ill. CA **$1,150,000** WAREHOUSE addn., CHICAGO, ILL. Spiegel, Inc., 1061 W. 35 St., Chicago, Ill., Olsen & Urbain, 5 S. Wabash Ave., Chicago 3, Ill., archts. Awarded July 18.

▲ **George A. Fuller Co.**, 111 W. Washington, Chicago, Ill. CA Est. **$8,000,000**, 25 story HOTEL, addn., and 4-level GARAGE, CHICAGO, ILL. Sheraton Towers Hotel, 505 N. Michigan Ave., Chicago, Ill. Quinn & Christianson, 134 N. LaSalle St., Chicago, Ill., archts. (**Correction**—contractor). CD 3/12, under CA.

▲ **L. J. Graf Constr. Co.**, 6327 Pulaski Rd., Chicago, Ill., CA **$1,100,000**, HOSPITAL, CHICAGO, ILL. Felician Sisters of U.S., 3800 W. Peterson Rd., Chicago, Ill. Pirola & Ehrback, 221 N. LaSalle St., Chicago 1, Ill., archts. Awarded July 13.

▲ **Seco Constr. Co.**, 2323 W. 47 St., Chicago, Ill., CA **$1,250,000**, COMMUNITY CENTER, GYMNASIUM, AUDITORIUM, POOL, paving sidewalks at 7158 N. Sacramento, CHICAGO, ILL. Jewish Community Center, 32 W. Randolph, Chicago, Ill. Bids May 21. Awarded July 10. CD 5/14.

▲ **Duggan Bros.**, 8006 S. Western Ave., Chicago, Ill., Owner Builds, **$3,000,000**, 200 HOUSES, DOLTON, ILL. Floyd Evans, 10018 S. Western Ave., Chicago, Ill., archt.

▲† **U. S. Eng.**, 475 Merchandise Mart, Chicago 54, Ill., rejected bids May 29, 65 CAPEHART FAMILY HOUSING, GRANITE CITY, ILL. LB **$1,269,000**. CD 6/30, under LB.

Concannon Builders, 208 S. Washington, Naperville, Ill. LB **$448,594**, ELMWOOD ELEMENTARY SCHOOL, NAPERVILLE, ILL. School Dist. 78, Naperville, Ill. Kruegel, Wilkins, Healy & Moore, 4 E. Clinton, Joliet, Ill., archts.

▲ **Coath & Goss, Inc.**, 5103 W. Lake St., Chicago 44, Ill., CA **$1,097,031**, 3 story, brick HAWTHORNE ELEMENTARY SCHOOL, OAK PARK, ILL. School Dist. 97, 122 Forest Ave., Oak Park, Ill. CD 6/30, under LB.

Figot B. Larson, 3837 W. Lake St., Chicago, Ill., LB **$960,000**, HIGH SCHOOL, RESIDENCE, paving, WESTCHESTER, ILL. Christian Brothers, Glencoe, Mo. CD 6/8.

▲ **Permanent Constr. Co.**, 2200 N. 3 St., Milwaukee, Wis., CA Est. **$3,000,000**, 1 story, 500x1,000 ft FACTORY, KOHLER, WIS. Kohler Co., Kohler, Wis. CD 10/24/57.

▲ **Babcock & Wilcox Co.**, 161 E. 42nd St., New York, N. Y., CA Over **$1,500,000**, mfg. and install BOILER at Utility's Blount St. Station, MADISON, WIS. Madison Gas & Electric Co., 100 N. Fairchild St., Madison, Wis. CD 4/29.

MISSISSIPPI TO ROCKIES

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

August 13 Kansas
August 18, 19 Texas

STREETS AND ROADS

August 7 Minnesota
August 13 Kansas
August 18, 19 Texas

† **Tex., Fort Hood**—WHERRY HOUSING—BA About 8/21—U. S. Eng., Box 1229, Galveston, repairs, imprvs. Wherry Housing, ENG-41-243-60-2. $500,000-$1,000,000. CD 9/8.

BUILDINGS—BA

Colo., Colorado Springs—SCHOOL—BA 8/10—School Dist. No. 2, 540 Asbury Place, 2nd story high school addn., Harrison Dist. $500,000. Alfred Watts Grant, 1640 Court Place, Denver, archt. CD 1/12.

Iowa, Ames—SCHOOL—BA 8/11—Community School Dist., Bd. Educ., 6th and Clark Sts., 1 story, brick, concrete, first unit of high school. $603,000. Tinsley, Higgins, Lighter & Lyon, Liberty Bldg., Des Moines, archts. CD 12/17.

▲ **Tex., Irving**—SCHOOL—BA 8/19—Irving Ind. School Dist., 190,000 sq. ft. high school. $2,250,000. Plans deposit $50. Wright, Rich & Assocs., 4350 N. Central Expressway, Dallas, archts. Ed. L. Wilson, 1810 Commerce St., and Wm. K. Hall, Exchange Bank Bldg., both Dallas, engrs. CD 6/17.

▲ **Colo., Pueblo**—SCHOOLS—BA 8/25—School Dist. No. 60, 102 West Orman Ave., 83,265 sq. ft. Junior High School, Sunset Park subdivision, $1,300,000; 83,265 sq. ft. Junior High School, Belmont Subdivision, $1,300,000. Kenneth J. Stines, 222 S. Victoria Ave., archt. CD 6/5.

▲ **Minn., Minneapolis**—OFFICE BLDG.—BA 8/25—Minneapolis-St. Paul Metropolitan Airports Comn., 2429 University Ave., St. Paul, Zone 14, general contract, electrical work, plumbing, heating, temperature control and refrigeration, fire protection work and ventilation, office bldg. for Northwest Airlines Main Base at Wold-Chamberlain Field. Plans deposit $100. Walter Butler Co., 1300 Minnesota Bldg., St. Paul, Zone 1, archt.-engr. CD 11/3.

▲† **Tex., Houston**—COURTHOUSE AND FEDERAL OFFICE—BA 8/28—General Services Admin., Public Buildings Service, Business Service Center, 1114 Commerce St., Dallas, Zone 2, United States Courthouse and Federal Office Constr. (except elevator plant) Appr. No. 47x1147, Proj. 41910. $12,000,000. Plans deposit $150. Staub, Rather & Howze, 2814 Virginia St., Jno. F. Staub, 2814 Virginia St., Harvin C. Moore, 2006 W. Alabama St., Rustay & Martin, 1811 Crawford St., archts. H. E. Bovay, Jr., 5009 Caroline St., Walter P. Moore, 2 Pinedale St., engrs. CD 5/25.

▲ **Colo., Denver**—FACTORY, etc.—BA 9/15—Bowman Biscuit Co., 842 Walnut (selected list of bidders), 3 story, 400,000 sq. ft. factory, warehouse and office. $5,000,000. Rust Engineering Co., P.O. Box 5450, Terminal Annex, engr. CD 6/17.

▲ **Tex. Houston**—OFFICE—Bids Asked—Southern States Life Insurance Co., Montrose National Bank Bldg., 6 story bsmnt. 78,000 sq. ft. masonry office, 3317 Montrose Blvd. $1,000,000. CD 5/25.

BUILDINGS—SLC

▲ **Ark., Texarkana**—MOTEL—Holiday Inns of America, Inc., 3728 Lamar Ave., Memphis, Tenn., soon lets contract 105 unit Holiday Inn Motel, Hy. 71 at intersection Lopp Rd. on Northern edge of Texarkana. $1,000,000.

▲ **N. M., Gallup**—MOTEL—Atkins & Assocs., c/o Herman Atkins, Gallup, soon let contract motel, US Hy. 66, $1,000,000. Irving Coryell, Inc., 4009 Manual Blvd. N. E., Albuquerque, archt.

HEAVY CONSTRUCTION—LB & CA

† **M. J. McGough Co.**, 1954 University Ave., St. Paul, Minn., LB **$663,499** (8 bidders), F.D. Radar facilities, FPS 24/24 at Air Force Station, Inv. No. ENG-21-018-59-31, BAUDETTE, MINN. U. S. Eng., 1217 U.S. Post Office & Custom House, St. Paul, Minn. Bids July 21. CD 7/1.

Johnson, Drake & Piper, Inc., Baker Bldg., Minneapolis, Minn., CA **$744,212**, general contract, 1 story, 208x254 ft. hangar for Western Air Lines at Wold-Chamberlain Field, MINNEAPOLIS, MINN. Minneapolis-St. Paul Metropolitan Airports Comn., 2429 University Ave., St. Paul, Minn. Bids June 25. CD 7/1, under LB.

Missouri Valley Dredging Co., 1331 South 20 St., Omaha, Neb., CA **$749,900**, Muscatine Island levee, Dist. Flood Control Proj., Stage I, Mississippi River, CIVENG-11-117-59-42B, IOWA. U. S. Eng., Clock Tower Bldg., Rock Island, Ill. Bids July 2. CD 6/11.

▲ **MISSCURI**—State Hy. Dpt., Jefferson City,

Mo.—**Koss Constr. Co.**, 510 Iowa-Des Moines Bank Bldg., Des Moines, Iowa. CA **$1,288,628**, subgrade, c. conc. 7.659 mi., CA **$1,245,915**, subgrade, c. conc. 6.723 mi. both Cooper Co., CA **$1,028,303**, subgrade, c. conc. 5.621 mi. Boone Co.;

Mo.—**Gillioz Co., Inc.**, Monett, Mo. CA **$509,961**, graded earth, culverts, 3.615 mi. Newton Co.;

Mo.—**Reno Constr. Co., Inc.**, P. O. Box 61, Overland Park, Kan., CA **$646,768**, graded earth, storm sewers, culverts, wid'n. 2.088 mi. Jasper Co.;

Mo.—**Freeto Constr. Co., Inc., & Affiliates**, National Bank Bldg., Box 609, Pittsburg, Kan., CA **$792,056**, graded earth, culverts. 7.309 mi. Newton Co.;

Mo.—**W. J. Menefee Constr. Co.**, 2500 W. 16th St., P. O. Box 30, Sedalia, Mo., CA **$568,494**, grading, culverts, c. conc. 0.114 mi. St. Francois Co.

Mo.—**Howard Constr. Co.**, 1504 North Osage, Sedalia, Mo., CA **$678,757**, graded earth, culverts, 8.911 mi. DeKalb Co.;

Mo.—**Fruin-Colnon Cont. Co. & Wholly Owned Subsidiaries**, 1706 Olive St., St. Louis 3, Mo. CA **$580,000**, b. conc. surf. on floor of 3 spans, removing, replacing, remainder concrete deck and all steel handrail, etc. replacing nav. lighting sys. 0.69 mi. St. Charles and Madison Counties. Grand total $7,338,882. Bids June 25. Awarded June 30. CD 7/6, under LB.

▲ **Williams Brothers**, National Bank, Tulsa Bldg., Tulsa, Okla., CA Est. **$13,950,000**, 279 mi. products line extension from Kansas to Nebraska and near Pierre, S. D. KANSAS-NEBRASKA-SOUTH DAKOTA. Kaneb Pipe Line Co., 3431 W. Alabama St., Houston, Tex. Pipe Line Technologists, 3431 W. Alabama St., Houston, Tex., engrs. CD 6/8.

▲ **Houston Contg. Co.**, 2807 Buffalo Speedway, Houston, Tex., CA **$1,750,000**, 6,000 hp. compressor station, Portland, TEXAS. Midwestern Gas Transmission Co., subsidiary Tennessee Gas Transmission Co., Tennessee Bldg., Houston, Tex. CD 9/15/52.

Lone Star Gas Co., 301 S. Harwood St., Dallas, Tex., Owner Builds, **$945,000**, 26 mi. 20 in. gas mains, Duncanville area, Dallas Co., TEXAS. CD 7/16.

▲ **TEXAS**—State Hy. Comn., Austin, Bids opened 7/21

Tex.—**Texas Gulf Constr. Co., Inc.**, 2215½ Ave. C Galveston, Tex., LB **$3,634,281** Galveston Bay Causeway, 2.005 mi. Hy. I.H. 45, Proj. I 45-1 (36) 002, Galveston Co.;

Tex.—**Buckner & Mone Contrs., Inc.**, Box 609, Jacksonville, Tex., LB **$145,701**, widen bridges, 0.247 mi. Hys. U.S. 175 and 69, Proj. C 198-2-14, etc. Henderson Co., both CD 7/1;

Tex.—**Harry Newton, Inc.**, Box 839, Graham, Tex., LB **$455,491**, bridge, approaches 0.283 mi. Hy. RM 2475, Proj. S 2224 (2) Wise Co. CD 6/26.

▲ **TEXAS**—State Hy. Comn., Austin, Bids opened 7/21,

Tex.—**R. W. McKinney**, Box 190, Nacogdoches, Tex. LB **$232,254**, base, surf. 8.052 mi. Hy. FM 2170 and 2478, Proj. S 2341 (1) & S 2268 (2), Collin Co., CD 6/26; LB **$419,206**, base, hot mix b. conc. 5.977 mi. Hy. St. 36, Proj. S 801 (4), Coryell Co. CD 7/1;

Tex.—**Austin Contg. Co.**, P.O. Box 1590, Dallas, Tex. LB **$555,635**, pavement, surf. shoulders 17.45 mi. Hy. St. 199, Proj. F 1102 (3), Jack, Wise and Parker Counties;

Tex.—**Heldenfels Bros.**, Box 1917, Corpus Christi, Tex. LB **$1,026,181**, flex. base, b. conc. 9.409 mi. Hy. St. 358, Proj. U 1113 (1) & F 1113 (2), Nueces Co.;

Tex.—**Flenniken Constr. Co.**, Box 6857, Dallas, Tex., LB **$1,152,445**, c. conc., storm sewers, grade separations 1.316 mi. Hy. St. 183, Proj. U 634 (24), Dallas Co.;

Tex.—**Killian-House Co.**, 4600 Broadway, San Antonio, Tex.; LB **$3,798,075**, concrete, b. conc. 2.825 mi. Hy. I.H. 10, Proj. I 10-4 (2) 573, Bexar Co. all foregoing. CD 6/26.

▲† **Robert E. McKee, General Contractors, Inc.**, 211 Washington Ave., Santa Fe, N. M., LB **$3,505,000**, Air Force Academy Chapel, COLORADO SPRINGS, COLO. Dpt. Air Force, Box 1670, Colorado Springs, Colo. Bids July 21. CD 6/30.

Albert E. Schillo, 3033 W. Mormouth, Littleton, Colo., CA **$700,000**, 50,000 sq. ft. Centennial SHOPPING CENTER, West Belleview and S. Federal Blvd., DENVER, COLO. Centennial Acres Shopping Center Co., 5050 S. Federal, Littleton, Colo. Ralph D. Peterson, 1750 Humboldt, Denver, Colo., archt. CD 9/3/57

BUILDINGS—LB & CA

▲ **Steenberg Constr. Co.**, 1371 Marshall Ave., St. Paul, Minn., CA **$1,000,000**, general contract SHOPPING CENTER, 16 stores, 52,000 sq. ft. North Hamline Ave. between County Roads C and C-2, ST. PAUL, MINN. L. Lipschultz, 261 Stonebridge Blvd., and J. L. Dudovitz, 1815 Scheffer Ave., both St. Paul, Minn. L. J. Johnson, Hamm Bldg., St. Paul, Minn., archt.

Ridgway Constr. Co., 2310 Jordan Ave. North, Minneapolis, Minn., CA **$582,000**, general contract SENIOR HIGH SCHOOL, SAUK RAPIDS, MINN. Bd. Educ., Independent School Dist. No. 47, Sauk Rapids, Minn. Bids July 10. CD 7/20, under LB.

▲ **W. A. Klinger, Inc.**, 2015 7 St., Sioux City, Iowa, CA **$1,089,745**, METALS DEVELOPMENT BLDG., Ames Laboratory, Proj. 59-e-15, AMES, IOWA, Atomic Energy Comn., Germantown, Md. Bids June 17. CD 6/24, under LB.

Sweetman Constr. Co., 3124 8 Ave., Sioux City, Iowa, Owner Builds, Over **$500,000**, 38 RESIDENCES, Madison and Bennett Aves., COUNCIL BLUFFS, IOWA.

Semate-Waters Constr. Co., 224 18th St., Rock Island, Ill., CA **$940,032**, HIGH SCHOOL, PLEASANT VALLEY, IOWA. Pleasant Valley Two School Dist., Bd. Educ., Pleasant Valley, Iowa. CD 6/19, under LB.

▲ **William P. Neil & Co., Ltd.**, 4814 Loma Vista Ver., Los Angeles, Calif., CA Est. over **$2,000,000**. Grandview Plaza SHOPPING CENTER, FLORISSANT, MO. Henry Schanedling & Sons Corp., 6505 Wilshire Blvd., Los Angeles, Calif. CD 12/10/57.

▲ **Robert Edwards, Inc.**, St. Peters, Mo. Owner Builds, **$1,500,000**, 200 residences, Steeple Chase Subdivision ST. PETERS, MO. Ralph Fouraier, 10200 Ladue Rd., Ladue 24, Mo., archt.

▲ **Peter Kiewit Sons Co.**, 1024 Omaha National Bank Bldg., Omaha, Neb., CA Est. **$5,000,000**, general contract 3 story Omaha Sears STORE, OMAHA, NEB. Sears-Roebuck Co., 30th and Farnam Sts., Omaha, Neb. Leo A. Daly Co., 633 Ins. Bldg., Omaha, Neb. archts. CD 9/14/55, under Brandeise Investment Co., as owner.

† **D. L. Moffitt Co.**, 607 East A St., P.O. Box 917, McCook, Neb., CA **$809,000**, HOSPITAL Proj. ABU-PH-36, PINE RIDGE, S. D. Bureau Indian Affairs, Dpt. Interior, P.O. Box 1777, Albuquerque, N. M. Bids June 10. CD 6/17, under LB.

▲ **B. B. Adams, General Contractor**, 4206 Mansfield Hy., Fort Worth, Tex., CA **$1,125,700.**, general constr. six B-58 ENGINE RUN STATIONS, incl. trenching pipe work, concrete walls, built up roof sheet metal and electrical work, FORT WORTH, TEX. Convair, Div. General Dynamics, Grants Lane, Fort Worth, Tex. Bids June 30. CD 7/7, under LB.

▲ **W. S. Bellows Constr. Corp.**, 716 N. Everton St., Houston, Tex., CA total est. **$18,000,000**, superstructure 32 story, 900,000 sq. ft., steel frame air-conditioned BANK-OFFICE, Main, Fannin, McKinney and Lamar Sts., HOUSTON, TEX. First City National Bank, 921 Main St., Houston, Tex. Bids July 14. CD 6/26.

C. N. **Davis, Jr., Davis Chevrolet Co.**, c/o I. Jack Castles & Assocs., archts., 20 N. Sampson St., Houston, Tex. Separate Contracts, **$300,000.** AUTO AGENCY, sales, shop, service, etc., HOUSTON, TEX. CD 7/16.

Jaska Constr. Co., 1111 Hawthorne St., Houston, Tex., CA **$840,000**, 6 story, bsmnt. 78,000 sq. ft. masonry OFFICE, 3317 Montrose Blvd., HOUSTON, TEX. Southern States Life Insurance Co., Montrose National Bank Bldg., Houston, Tex. CD 7/20.

Tex-Craft Builders, Inc., 4904 Travis St., Houston, Tex., CA Est. **$410,000**, 48-unit APARTMENT, Counterpoint Dr., HOUSTON, TEX. Dan Matter, c/o contractor.

▲ **Haggerty-Messmer Co.**, Bozeman, Mont., CA **$1,068,900**, general constr. 400 students MEN'S DORMITORY, Montana State College, BOZEMAN, MONT. State Bd. Educ., Helena, Mont. Bids July 14. CD 7/6.

Irwin **Hotwitz**, 1250 Logan, Denver, Colo., LB approx. **$500,000**, one three story, 20 units, one 3 story, 29 units, APARTMENTS; DENVER, COLO. Pearl Street Corp., Marvin Lederman, 1250 Logan, Denver, Colo. Roland Wilson, 1435 Glencoe, Denver, Colo., archt.

† **Robert E. McKee**, 485 Wyoming Blvd., S. E., Albuquerque, N. M., CA **$977,700**, 32,000 ft. steel frame MACHINE SUPPORT BLDG., at Sandia Laboratory, Inv. No. ENG-292-59-39, ALBUQUERQUE, N. M. Atomic Energy Comm., Albuquerque Operations Office, P. O. Box 5400, Albuquerque, N. M. Bids June 30. CD 7/8, under LB.

FAR WEST

HEAVY CONSTRUCTION—BA

† **Nev., Tonopah**—TARGET IMPACT PAD, etc.—BA 8/12—U. S. Atomic Energy Comm., Box 5400, Penn. and H Sts., Sandia Base, Albuquerque, N. M., concrete target impact pad, 16 camera stations, 6 camera pits, balloon inflation bldg., signal terminal bldg., prefabricated metal machine shop, water storage tank, roads, signal and electrical distr. sys. $750,000-$900,000. CD 7/16, under LB.

BUILDINGS—BA

▲ **Wash., Spokane** — HOSPITAL — BA 8/7 — Deaconess Hospital, W. 733 4th St., 6 story hospital addn. $2,500,000. Extended date. Fugard, Burt, Wilkinson & Orth, 520 N. Michigan St., Chicago, Ill., and N. E. Thompson, Paulsen Bldg., Spokane, Wash., archts. CD 6/25.

▲ **Calif., Paramount**—SCHOOL—BA 8/11—Paramount Unified School Dist., 15110 South California Ave., steel frame (6 bldgs.) Alondra Junior High School, 16200 Downey Ave. $1,404,000. Extended date. Killingsworth, Brady & Smith, 3833 Long Beach Blvd., Long Beach, archts. CD 7/17.

Wash., Auburn — SCHOOL — BA 8/13 — Federal Way School Dist. 210, 1 story, 80,000 sq. ft., frame Lakota Junior High School. $900,000. Plans deposit $50. J. W. Maloney, Central Bldg., Seattle, Zone 4, archt. CD 4/20.

▲ **Hawaii, Honolulu**—APARTMENTS—BA 8/20—Hawaii Housing Auth., 1002 N. School St., 2 apartments, 156 units, incl. site work. $2,400,000. CD 5/7/56.

▲ **Calif., Los Angeles** — NUCLEAR MEDICINE RESEARCH LABORATORY—BA 9/1—Bd. Regents, University of California, at Los Angeles, 405 Hilgarde Ave., nuclear medicine research laboratory. $1,750,000. CD 10/3.

BUILDINGS—SLC

▲ **Calif., Corte Madera**—DEPARTMENT STORE—Corte Madera Shopping Center, c/o John S. Bolles, archt., 14 Gold St., San Francisco, soon lets contract 75,000 sq. ft. department store, $4,000,000. Montgomery Ward & Co., lessee. CD 7/13.

HEAVY CONSTRUCTION—LB & CA

† **Reed & Martin, Inc.**, Box 568, Fairbanks, Alaska, LB **$533,862**, (9 bidders), boilerhouse, 2,400 ft. utilidor and heating sys. in bldgs., Mount McKinley National Park, ALASKA. National Park Service, Anchorage, Alaska. Bids July 16. CD 6/29.

▲ **IDAHO**—State Hy. Dpt., Boise, Bids opened 7/14,
Hoops Constr. Co., Twin Falls, Idaho, LB **$2,539,025**, 4-lane divided roadway, drainage structures, 4 grade separation structures and plant mix bit. surf. 10.341 mi. Interstate No. 80N, and roadway, drainage structures and plantmix bit. surf. 0.524 mi. US 30 connection, Payette Co. CD 6/25.

▲ **IDAHO**—State Hy. Dpt., Boise,
Morrison-Knudsen Co., Inc., 319 Broadway Ave., Boise, Idaho, CA **$1,212,048**, constr. west bound lane parallel to US 30, 2 concrete bridges, 2 concrete underpasses and plantmix bit. surf. 12.145 mi. Interstate No. 80N, Ada and Elmore Counties. Bids July 7, awarded July 10. CD 7/14, under LB.

Gilbert & Dolan, 4747 N. 16, Phoenix, Ariz., CA **$924,475**, central refrigeration system and tunnel system to service science centers and addns. at Arizona State University, TEMPE, ARIZ. Arizona State University, Tempe, Ariz. Bids July 7. CD 6/19.

▲ **Grant County Constructors (Morrison-Knudsen Co., Inc.**, 319 Broadway Ave., Boise, Idaho, **Kaiser Engrs. Div., H. J. Kaiser Co.**, 1924 Broadway, Oakland, Calif., **Macco Corp.**, 14409 Paramount Blvd., Paramount, Calif., **Raymond International, Inc.**, 140 Cedar St., New York, N. Y., and **F & S Constr. Co.**, Ephrata, Wash.), CA **$93,277,690,** (incl. General Electric Co. generators, $15,650,157), Wanapum Dam, Columbia River, WASHINGTON. Grant Co., Public Utility Dist., Ephrata, Wash. Bids May 15. CD 5/19, under LB.

▲† **J. H. Sellen Constr. Co.**, 228 9 Ave. N., Seattle, Wash., LB **$2,486,125**, est. $2,840,056 (22 bidders), BOMARC facilities, Paine Air Force Base, Inv. 59-128, EVERETT, WASH. U. S. Eng., 1519 S. Alaskan Way, Seattle 4, Wash. Bids July 21. CD 7/13.

▲ **Cherf Bros. & Sandkay Constr. Co., Inc.**, Box 938, Ephrata, Wash., and **J. A. Jones**, Medical Arts Bldg., Seattle, Wash., LB **$2,824,359** (10 bidders), Bull Run Dam No. 2 and spillway, PORTLAND, ORE. City of Portland, City Hall, Portland, Ore. Bids July 10. CD 6/16.

▲ **CALIFORNIA**—State Hy. Engr., Public Works Bldg., 1120 N. St., Sacramento, Bids opened 7/22,
Judson-Pacific Murphy Div., Yuba Consolidated Industries, Inc., 4300 Eastshore Hy., Emeryville, Calif., LB **$5,769,000,** (8 bidders), Benecia-Martinez Bridge Substructure across Carquinez Strait, incl. 2,323,000 lbs. bar reinforcing steel, precast prestressed concrete piling, 41,030 lin. ft., 414 driving concrete piles, 9,800 lin. ft. concrete filled caissons, etc. X-IV-Sol, C.C. 75-A, H, Contra Costa and Solano Counties. CD 6/10.

▲† **D. D. Altermatt Co. & C. R. Fedrich Co.**, 320 Deer Island Lane, Novato, Calif., CA **$2,599,000**, fuel storage and distr. sys., 1st and 2nd Increments, NBy 20922, Lemoore Naval Air Station, LEMOORE, CALIF. Dist. P. Wks. Office, 12th Naval Dist., Room C112, San Bruno, Calif. Bids June 17. CD 6/23, under LB.

▲ **Griffith Co.**, 1060 S. Broadway, Los Angeles, Calif., CA **$1,418,780**, rein.-con. conduit for Dominguez Channel, Grammercy Pl. to Redondo Beach Blvd., Torrance, LOS ANGELES, CALIF. Los Angeles Co. Flood Control Dist., 2250 Alcazar St., Los Angeles, Calif. Bids June 26. CD 7/1, under LB.

▲ **H. C. Smith Constr. Co. & Alvada, Inc.**, 900 Rowena Ave., Los Angeles, Calif., LB **$2,809,183** (6 bidders), Storm Drain Proj. No. 59, Unit No. 1, Central Business Distr. storm drain portion of Line A, Line 1 and portion Line H, LOS ANGELES, CALIF. Los Angeles County Flood Control Dist., 2250 Alcazar St., Los Angeles, Calif. Bids July 17. CD 6/5.

▲ **Stolte, Inc.**, 5467 San Fernando Rd., Los Angeles, Calif., CA **$3,044,825**, central utilities plant, service and maintenance bldg., Complex 4, Phase 4, Los Angeles International Airport, Proj. 115-06, LOS ANGELES, CALIF. City, Dpt. Airports, City Hall, Los Angeles, Calif. Bids June 30. CD 7/2, under LB.

▲ **McGuire & Hester Co.**, 796 66th Ave., Oakland, Calif., CA **$1,143,030**, street imprvs. between Whitman Rd. and Mountain View-Alviso Rd. (storm drains, water mains, sewers, curbs, gutters, street paving, lighting, etc.), MOUNTAIN VIEW, CALIF. City, City Hall, Mountain View, Calif. Bids June 2. CD 6/9, under LB.

▲ **Colich Constr. Co.**, 8320 Isis Ave., Los Angeles, Calif., LB **$1,445,328** (12 bidders), sewerage sys., pumping station, treatment plant, RIVERSIDE, CALIF. Jurupa Community Services Dist., 8520 Donna Way, Riverside, Calif. Bids July 17. CD 6/30.

▲ **Bechtel Corp.**, 485 Lexington Ave., New York, N. Y., CA **$1,871,200**, feed prep structure, heater structure and reactor structures, 2100 E. Pacific Coast Hy., SAN PEDRO, CALIF. Texaco, Inc., 135 E. 42nd St., New York, N. Y.

BUILDINGS—LB & CA

Burgess Constr. Co., Box 1410, Fairbanks, Alaska, LB **$633,339**, (3 bidders), ENGINEERING BLDG., COLLEGE, ALASKA. University of Alaska, College, Alaska. Bids July 10. CD 6/29.

J. B. Warrack Co., 400 2 Ave. W., Seattle, Wash., CA **$962,150**, Campbell Station and DeBarr Vista SCHOOLS, ANCHORAGE, ALASKA. Independent School Dist., 1602 Hillcrest Dr., Spenard Branch, Anchorage, Alaska. Bids June 16. CD 6/24, under LB.

T. G. K. Constr. Co., 2750 W. McDowell Rd., Phoenix, Ariz., CA **$956,900,** 5 story, 86,000 sq. ft. BANK and OFFICE, Main and MacDonald Sts., MESA, ARIZ. Valley National Bank, 141 N. Central Ave., Phoenix, Ariz. Awarded June 4. CD 6/22, under LB.

Ritter Roof Structures, Inc., 4815 S. W. Macadam Ave., Portland, Ore., and **Teeples & Thatcher**, 8850 S. E. Otty Rd., Portland, Ore., CA Est. **$500,000**, 450 x 480 ft., frame plywood PLANT, at Chelatchie Prairie, southeast of Woodland, YACOLT, WASH. International Paper Co., Long-Bell Div., Longview, Wash. CD 6/11.

A. V. Peterson Co., 2827 N. E. Glisan St., Portland, Ore., LB **$667,969,** (8 bidders), MEMORIAL UNION addn., Oregon State College, CORVALLIS, ORE. State Bd. Higher Educ., University of Oregon, Eugene, Ore. Bids July 17. CD 6/24.

▲ **Coordinated Constr. Co.**, 12901 Crenshaw Blvd., Hawthorne, Calif., CA **$2,000,000,** 121,000 sq. ft., MANUFACTURING PLANT, East St. and Ball Rd., ANAHEIM, CALIF. Tapco Group West Coast Div. Thompson Ramo Woolridge, Inc., 5500 W. El Segundo, Hawthorne, Calif. Quinton Eng. Co., 812 W. 8th St., Los Angeles, Calif., engr. CD 7/8.

▲ **United Constr. Co.**, 3839 Riverside Blvd., Sacramento, Calif., CA **$1,157,100,** Bella Vista HIGH SCHOOL, CARMICHAEL, CALIF. San Juan Union High School Dist., 2919 Fair Oaks Blvd., Carmichael, Calif. Bids July 9, awarded July 15. CD 7/15, under LB.

▲ **John D. White & D. J. Rust,** c/o Johnnie White Co., 975 W. Winton Ave., Hayward, Calif., Owner Builds, **$4,000,000,** 300 unit APARTMENT, 15 acre site near Foothill Blvd. and Castro Valley Freeway, CASTRO VALLEY, CALIF.

▲ **Wm. P. Neil Co.**, 2922 Sunol Dr., Los Angeles, Calif., CA **$1,150,000,** 2 story, 176,853 sq. ft. WAREHOUSE and OFFICE, 6040 E. Bandini Blvd., EAST LOS ANGELES, CALIF. Catalina, Inc., 443 S. San Pedro St., Los Angeles, Calif. Stiles & Robert Clements, 210 W. 7th St., Los Angeles, Calif., archts.

▲ **Lewis C. Nelson & Son**, 2915 McCall Ave., Selma, Calif., CA **$1,263,000,** 2 story, bsmnt. POLICE FACILITIES and EMERGENCY HOSPITAL, FRESNO, CALIF. City, Police Dpt., Merced and Broadway, Fresno, Calif. Bids June 2. CD 6/10, under LB.

▲ **Lesser Industrial Properties**, 1106 S. La Cienega Blvd., Los Angeles, Calif., Owner Builds, **$1,200,000**, concrete tile MANUFACTURING PLANT, Gilbert and Moore Ave., FULLERTON, CALIF.

Steed Bros., 714 Date St., Alhambra, Calif., CA **$847,000,** 129x204 ft. CHURCH, GLENDALE, CALIF. First Methodist Church of Glendale, 134 N. Kenwood St., Glendale, Calif. Flewelling & Moody, 766 Colorado Blvd., Los Angeles, Calif., archts.

Herbert Goldsworthy, 409 Santa Monica Blvd., Santa Monica, Calif., CA **$880,960**, 2 story, concrete, masonry Y.M.C.A., 520 W. Seaside Blvd., LONG BEACH, CALIF. City of Long Beach, City Hall, 205 W. Broadway, Long Beach, Calif.

William W. Dickson, 6817 Van Nuys Blvd., Van Nuys, Calif., CA **$562,500**, 21,925 sq. ft. POLICE STATION, 19020 Vanowen St., Reseda, LOS ANgeles, CALIF. City, City Hall, Los Angeles, Calif. Bids July 8. CD 7/15, under LB.

Austin Co., 777 E. Washington Blvd., Los Angeles, Calif., CA **$557,546**, 93,545 sq. ft. reinforced brick STORE, 1100 Highland Ave., NATIONAL CITY, CALIF. Montgomery Ward & Co., 621 W. Chicago, Chicago, Ill.

Atlantic & Pacific Corp., 301 S. Broadway, Orcutt, Calif., Owner Builds, **$716,100**, 53 stucco DWELLINGS, Glines Ave., Oak Knoll Rd., Royal Oaks Dr., ORCUTT, CALIF.

▲ **James B. Crocker Co.**, 1296 Market St., Yuba City, Calif., LB **$1,477,000** (10 bidders), 88,586 sq. ft. wood frame, stucco Oroville HIGH SCHOOL, OROVILLE, CALIF. Oroville Union High School Dist., 1535 Bridge St., Oroville, Calif. Bids July 14. CD 7/8.

Shepherd & Green Co., P.O. Box 1078, Stockton, Calif., CA **$868,400, 1 story**, 180,000 sq. ft. concrete WAREHOUSE, PITTSBURG, CALIF. Western California Canning Co., Inc., c/o Philip D. Tomasello, archt., 605 Washington St., San Francisco, Calif. CD 6/3, under LB.

▲ **Forest Homes**, Black Rd., Santa Maria, Calif. Owner Builds. **$1,161,000**, 74 stucco DWELLINGS, Tanglewood Tract No. 1011, Unit 1, SANTA MARIA, CALIF.

▲ **R. A. Watt Constr. Co.**, 7862 S. Western Ave., Los Anleges, Calif., CA **$1,238,000,** 99 frame, stucco DWELLINGS, Tracts 17101 and 21480, WEST COVINA, CALIF. Aneas Corp., c/o builder.

▲ **Valleywood Bldg. Co.**, 8549 Wilshire Blvd., Beverly Hills, Calif., Owner Builds, **$1,519,900,** 135 stucco DWELLINGS, Tract 21890, WOODLAND HILLS, CALIF. Martin Stern, 8325 Wilshire Blvd., Beverly Hills, Calif., archts. Engineering Service Corp., 1127 W. Washington Blvd., Los Angeles, Calif., engrs.

CANADA

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES
August 5, 19 Ontario

STREETS AND ROADS
August 5 Ontario

BUILDINGS—BA

▲ **Alta., Red Deer**—HOSPITAL, etc.—BA 8/5—Red Deer Municipal Hospital Bd., Red Deer, hospital addn. and nurses' residence, $1,471,000. Plans deposit $100. J. A. Cawston & Assocs., 346 23rd Ave. S., Calgary, archts. CD 3/7/58.

▲ **Que., Montreal**—OFFICE—BA 8/20—Canadian National Railways, A. V. Johnson, ch. engr., 355 McGill St., 17 story, steel, glass, stone, metal office, 800-car garage, Mansfield, Belmont and Lagauchetierre St. $15,500,000. Plans deposit $2,000. H. C. Greenside, 355 McGill St., owners, ch. archt.

BUILDINGS—SLC

Que., Montreal — DYE HOUSE — Dominion Textiles Co. Ltd., 1950 Sherbrooke St., soon lets contract 2 story, 30,000 sq. ft., rein.-con., brick dye house $500,000.

HEAVY CONSTRUCTION—LB & CA

▲ **ALBERTA**—Alberta Govt., Parliament Bldgs., Edmonton,
J. A. Moulson Constr. Ltd., 1714 41st St. S.E., Forest Lawn, Alta., CA **$1,195,288**, grading, etc. about 35 mi. Hy. 35 from north of Hotchkiss to Kemp Creek, Edmonton. Awarded July 14

ONTARIO—Dpt. Hys., Parliament Bldgs., Toronto, Bids opened 7/15,

Peacock & McQuigge Ltd., 1109 Millwood Rd., Toronto, Ont., LB **$897,722** (5 bidders), grading, culverts, two bridges, Hy. 401, from New Highway 38 to Odessa and bridges at Collins Creek and Millhaven Creek (Contract 59-112), Odessa. CD 5/12.

▲ **Anglin-Norcross Ontario Ltd.**, 224 Davenport Rd., Toronto, Ont., LB **$1,059,000**, sewage treatment plant and water sys. for hospital, 15 mi. west of Chatham, CEDAR SPRINGS, ONT. Ontario Dpt. P. Wks., East Block, Parliament Bldgs., Toronto. Bids July 15. CD 6/25.

BUILDINGS—LB & CA

▲ **Commonwealth Constr. Co. Ltd.**, 120 5th St., Calgary, Alta., CA Est. **$5,000,000**, 20 story, 150,000 sq. ft. OFFICE, southwest corner 7th Ave. and 6th St. N.W., CALGARY, ALTA. Lord Iveagh Group, British Pacific Bldg. Ltd., c/o Rule, Wynne & Rule, archts., 526 12th Ave. S.W., Calgary, Alta. (**Correction**—contractor). CD 2/13, under CA.

▲ **Mannix Co. Ltd.**, 737 8th Ave. S.W., and **Burns & Dutton Concrete & Constr. Co. Ltd.**, 5720 4th St. S.E., both of Calgary, Alta., CA **$2,500,000**, total est. $6,500,000, first section for 1 story tire mfg. PLANT, 2 story PROCESSING PLANT, 3 story OFFICE - WAREHOUSE - ADMINISTRATION SECTION, CALGARY, ALTA. Firestone Tire & Rubber Co., 42nd Ave. 8th St. S.E., Calgary, Alta. CD 6/10.

▲ **Marwell Constr. Co. Ltd.**, 1500 W. Georgia, Vancouver, B. C., CA Est. **$4,000,000**, 5 and 6 story HOTEL, marina and swimming pool, VANCOUVER, B. C. Western Hotels, Inc., Olympic Hotel, Seattle, Wash.

▲ **George Wimpey & Co. Ltd.**, 80 N. Queen St., Islington, Ont., LB **$1,102,988**, (15 bidders), Victoria Park SECONDARY SCHOOL, TORONTO, ONT. North York Bd. Educ., 15 Oakburn Crescent, Toronto, Ont. Bids July 13. CD 6/26.

Bird Constr. Co., Ltd., 7th Ave. and Smith St., Regina, Sask., CA **$540,000**, 10 level, 125 x 200 ft., rein-con. PARKING GARAGE, REGINA, SASK. Robert Simpson (Regina) Ltd., Hamilton St. and 11th Ave., Regina, Sask. H. K. Black Co. Ltd., Black Block, Regina, Sask., archts. W. Sefton & Assocs. Ltd., 901 Yonge St., Toronto, Ont., consult. engrs.

PUERTO RICO

BUILDINGS—LB & CA

▲ **Marc A. Covetti**, c/o Frank Ledesma, Dpt. Tourist, P.O. Box 2672, San Juan, Puerto Rico, Own Forces, **$20,000,000**, RESORT HOTEL, Condado Beach, SAN JUAN, PUERTO RICO. Juan Amador, edificio Garcia Comercial, Calle Labra, Stop 18, San Juan, Puerto Rico, archt.

LATIN AMERICA

HEAVY CONSTRUCTION—LB & CA

▲ **Raymond International, Inc.**, 140 Cedar St., New York, N. Y., U. S. A., CA Est **$16,000,000**, port facilities, ECUADOR, Autoridad Protuaria de Guayaquil, Guayaquil, Ecuador. CD 7/14, under LB.

BUILDINGS—LB & CA

▲ **Allis-Chalmers Mfg. Co.**, 1126 S 70, Milwaukee, Wis., U.S.A., CA **$10,000,000**, cement PLANT, 610 ft long kiln at Barker Plant, Buenes Aires Province, ARGENTINA. Cia Industrial Argentina Loma Negra S.A., Diagonal Ptes, R.S. Pena 639, Buenes Aires, Argentina.

▲ **Allis-Chalmers Mfg. Co.**, 1126 S 70, Milwaukee, Wis., U.S.A., CA **$4,300,000**, cement PLANT addns at Salto and in Cordoba and Mendoza Provinces, ARGENTINA. Cia Sud Americana de Cemento Portland, Juan Minetti y Hijos Ltda, S.A., Ituzaingo 87, Cordoba, Argentina.

PROPOSED PROJECTS

WATER SUPPLY

▲ **Calif., San Diego**—City, Civic Center, 50 m.g. capacity, Miramar Filtration Plant, can expand to 100 million filter water from 2nd Colorado River Aqueduct. **$3,500,000**. James Montgomery, 535 E. Walnut St., Pasadena, consult. engr. CD 1/5/51.

▲ **Calif., Sharp Peak**—North Coast County Water Dist., P.O. Box 35, water sys. addns. **$1,250,000**.

▲ **N. C., Raleigh**—City, City Hall, bond election Aug. 11, improving and enlarging water supply sys., **$1,742,000**.

▲ **Tex., Lubbock**—City, City Hall, bond election Sept. 10, Item No. 4, water distr. sys. **$1,250,000**; Item 5, water reservoir **$2,500,000**; Item 6, WW sys. rehabilitation **$250,000**. CD 11/16/55.

SEWERS. WASTE DISPOSAL

▲ **Calif., Yorba Linda**—Yorba Linda County Water Dist., sewerage trunk lines, laterals. **$1,800,000**. To go ahead 1962.

▲ **Ill., Downers Grove**—Village, Village Hall, voted bonds July 7, storm sewers, **$2,260,000**. CD 6/19.

▲ **La., Alexandria**—Sewerage Dist. No. 1 of Rapides Parish, Proj. La. P-3054, sewers **$3,387,000**. Louis J. Daigre, 529 DeSoto, Alexandria, and G. A. Heft & Co., 820 Union, New Orleans, consult. engrs.

▲ **Minn., Roseville (P. O. St. Paul)**—Village, Village Hall, sanitary sewers NE and NW section, Gluek Lane area. **$1,500,000**. Banister Engineering Co., 310 North Snelling Ave., St. Paul, consult. engr. Bids probably in fall.

▲ **N. H., Nashua**—Bd. P. Wks., 229 Main St., sewerage and sewage disposal plant. **$1,000,000**. Camp, Dresser & McKee, 6 Beacon St., Boston, Mass., consult. engrs. Constr. Spring 1960. CD 1/8.

▲ **N. C., Raleigh**—City, City Hall, bond election Aug. 11, imprv. and enlarging sanitary sewers, **$1,357,000**.

▲ **O., Elyria**—City, City Hall, bond election Nov. 3, sanitary and relief sewerage sys. **$1,840,000**. CD 11/11.

▲ **O., Lorain**—City, City Hall, bond election Nov. 3, sewers. **$1,000,000**. CD 10/10.

▲ **Tex., Lubbock**—City, City Hall, bond election Sept. 10, Item No. 8, sanitary sewers, **$1,000,000**; Item No. 9, sanitary sewerage sys. rehabilitation, **$100,000**; Item No. 10, storm sewers **$120,000**. CD 3/11/58.

BRIDGES

▲ **Ont., Sudbury**—City, 83 Cedar St., underpass at Riverside Dr., under Canadian Pacific Ry. tracks, **$1,600,000**. M. M. Dillon & Co. Ltd., 141 Maple St., London, consult. engrs. CD 1/11/56.

STREETS AND ROADS

▲ **Ariz., Scottsdale**—City, City Hall, paving, guttering, curbing, walks and storm drains **$1,066,996**. To go ahead in 1960.

▲ **N. C., Raleigh**—City, City Hall, bond election Aug 11, imprv. streets, **$1,500,000**.

▲ **O., Lorain**—City, City Hall, bond election Nov. 3, street imprvs. **$1,500,000**. CD 11/10.

▲ **Tex., Lubbock**—City, City Hall, bond election Sept. 10, Item No. 1, street paving, imprvs., **$2,500,000**; Item No. 2, street paving, reworking **$700,000**. CD 2/8/57.

AIRPORTS

▲† **Calif., Moffett Field**—DATA REDUCTION CENTER, etc.—National Aeronautics & Space Admin., Ames Research Center, data reduction center and mass transfer cooling and aerodynamics facility, Ames Research Center. **$6,555,000** funds appropriated. CD 2/7/57.

▲† **Calif., Point Arguello**—LAUNCHING FACILITIES—National Aeronautics & Space Admin., Ames Research Center, Moffett Field, launching facilities at Pacific Missile Range. **$8,000,000** funds appropriated.

▲† **Va., Langley Field**—THERMAL STRUCTURES TUNNEL, etc.—National Aeronautics & Space Admin., Langley Research Center, alterations to thermal structures tunnel, analytical computing equipment, conversion of gust tunnel to noise research laboratory, conversion test cells to noise test faciliy and heater and vacuum system for gas dynamics laboratory at Langley Research Center, Hampton. **$4,580,000** (funds appropriated).

LATIN AMERICA

▲ **Chile., Santiago**—RUNWAY, etc.—Government of Chile, Dpt. P. Wks., Santiago, 10,500 ft. runway, taxiway, terminal hangars, navaids and communications, refueling facilities, **$7,000,000**. Airway Engineering Corp., 1212 18 St. N.W., Wash. 6, D. C., U.S.A., consult. engrs.

AMERICANS ABROAD

▲ **Philippines, Manila**—RUNWAY, etc.—Dpt. P. Wks., Govt. of Philippines, Manila, runway-terminal, navaids, **$3,500,000**. Airway Engineering Corp., 1212 18 St. N.W., Wash. 6, D. C., U.S.A., consult. engrs.

FOREIGN

▲ **Norway**—POWER PLANT—Norwegian Watercourse & Electricity Bd., Oslo, two power plants, combined capacity 168,000 kw., Trondheim area in mid-Norway and the remainder exported to Sweden, Tunnsjo and Tunnsjodal. **$54,000,000**.

PUBLIC BUILDINGS

▲ **Ark., Fayetteville**—DORMITORY—University of Arkansas, plans by Mott, Mobley & Hartsman, 299 Merchants Bank Bldg., Fort Smith, mens dormitory 456 capacity, Ark. CH 39D. **$1,724,200**. CD 3/30/56.

▲† **Calif., Fort Ord**—HOUSING—Purchasing & Contg. Div., Dpt. Army, plans by Angus McSweeney, 2960 Van Ness Ave., San Francisco, 500 unit Capehart Housing **$8,000,000**. CD 4/8.

▲ **Calif., Los Angeles**—OUTPATIENT CLINIC—Bd. Supervs. Los Angeles Co., 501 Hall of Records, plans by Froehlich & Assoc., 383 S. Robertson Blvd., Beverly Hills and Douglas Honnold & John Rex, 9026 Melrose Ave., Los Angeles, 200,000 sq. ft. outpatient clinic, Marengo, Brittania and Cummings Sts. and Zonal Ave. **$7,300,000**. ($828,000 allotted). CD 11/11.

▲ **Calif., Pomona**—SCHOOL—Pomona Unified School Dist., plans by Keith P. Marston, 25 South Euclid Ave., Pasadena, high school, **$2,000,000**. CD 7/2.

▲ **Calif., Los Angeles**—CIVIC CENTER GARAGE—Los Angeles County, 501 Hall of Records, plans by Victor Gruen & Assocs., 135 S. Doheny Dr., Beverly Hills, civic center garage Hill to Hope and 1st and 2nd Sts., Spec. 1978. **$10,764,700**.

▲† **Calif., Monterey**—HOUSING—Dist. P. Wks. Office 12th Naval Dist. San Bruno, plans by Donald Beach Kirby & Assocs., 109 Stevenson St., San Francisco, Wherry Housing Proj. alterations resurf. streets, repair walks, driveways, and alteration to housing **$1,249,000**.

▲ **Calif., Sacramento**—COURTHOUSE—Bd. Supervs., Sacramento County, Admin. Bldg., 827 7th St., voted bonds courthouse **$4,800,000**. CD 2/27.

▲ **Calif., Sacramento**—JUVENILE HALL—Bd. Supervs., Sacramento County, Admin. Bldg., 827 7th St., voted bonds juvenile hall. **$1,800,000**. CD 2/27.

▲ **Calif., San Francisco**—CIVIC CENTER AUDITORIUM—City and San Francisco County, City Hall, **$7,575,000** bond election Nov. 3, imprv. Civic Center Auditorium. CD 11/10.

▲ **Calif., San Francisco**—PALACE OF FINE ARTS—City and San Francisco County, City Hall, **$1,800,000** bond election Nov. 3, imprv. Palace of Fine Arts. CD 11/11.

▲ **Conn., Waterbury**—SCHOOL—Town, Bd. Educ., 271 E. Main St., plans by Francis L. S. Mayers, 482 Summer St., Stamford, high school, Hamilton Ave., **$1,000,000**.

▲ **D. C., Wash.**—HOSPITAL—D. C. Govt., Bldgs. & grounds, 499 Pa. Ave. N. W., plans by Justement, Elam, Callmer & Kidd, 2011 K Sts. N. W., altering District General Hospital. **$2,000,000** (no appropriation).

▲ **D. C., Wash.**—LABOR DPT.—General Services Admin., 19 and F Sts. N. W., plans by Clas & Riggs, Wyatt Bldg., labor dpt. bldg., 6 St. N. W. between Pennsylvania Ave. and C Sts., District's Unemployment Compensation Bd. and U. S. Employment Service for District. **$4,000,000-$5,000,000**.

▲† **D. C., Wash.**—MUSEUM—General Services Admin., 19 and F Sts. N.W., preliminary cost estimates being prepared by Harbeson, Hough, Livingston & Larson, Architects Bldg., Phila., Pa. National Air Museum for Smithsonian Institution, located on Mall site bounded by Independence Ave., Jefferson Dr., 4 and 7 Sts. **$5,000,000**. CD 12/12/55.

▲ **Ill., Rockford**—COURT HOUSE—Bd. Supervs. Winnebago Co., Court House, plans by Gilbert A. Johnson & Assocs., American National Bank Bldg., Rockford, architectural consultants, 95,000 sq. ft. court house addn. **$1,000,000**. CD 6/24/46.

▲ **Ind., Peru**—HOUSING—Purch. & Contg. Office, Bunker Hill Air Force Base, plans by Allied Architects & Engineers of Indianapolis, Inc., 1537 Central Ave., Indianapolis, 400 units Capehart housing, **$6,400,000**. CD 4/27.

▲† **Mass., Ayer**—HOUSING—U.S. Eng., 150 Causeway St., Boston 14, plans by Carl Koch & Assocs., Inc., engr.-archt., 55 Brattle St., Cambridge, Zone 38, Capehart Housing, Standard and Fort Devens Proj. No. 1, Fort Devens. CD 4/8.

▲ **Mass., Georgetown**—SCHOOL—Georgetown-Rowley & Ipswich Regional School Dist. Bldg. Comn., 30 Summer St., plans by Ellsworth H. Tidd, 156 West Main St., Junior-Senior High School, Watson-Pingreen Site. **$2,000,000**. CD 7/2/58.

▲ **Mass., Lowell**—SCHOOL—City, School Dpt., City Hall, plans by M. A. Dyer Co., 24 School St., Boston, elementary school, South Common. **$1,000,000**. Constr. 1960. CD 2/7/57.

▲ **Mass., Webster**—SCHOOL—Town, School Bldg. Comm., c/o Supt. Schools, Negus St., intermediate school, grades 3 thru 8. **$1,164,000**. Constr. 1960.

▲ **Minn., Duluth**—INDUSTRIAL EDUCATION, etc.—Regents of the University of Minnesota, 404 Administration Bldg., Minneapolis 14, industrial education Duluth Campus **$855,000**, classroom **$755,000**. Constr. within two years.

▲ **Minn., Minneapolis**—BUSINESS ADMINISTRATION, etc.—Regents of University of Minnesota, 404 Administration Bldg., Zone 14, school of business administration **$1,911,600**, social sciences **$2,000,000**, foreign languages, **$2,008,800**. Constr. within two years.

▲ **Minn., Moorhead**—SCIENCE and INDUSTRIAL ARTS—State College Bd., 41 Sherburne Ave., St. Paul, science and industrial arts bldg. Moorhead State College. **$1,575,000**.

▲ **Minn., St. Cloud**—INDUSTRIAL EDUCATION, etc.—State College Bd., 41 Sherburne Ave., St. Paul, industrial education and arts bldg. **$855,000**, heating plant **$630,000**. St. Cloud State College. Work to begin within two years.

▲ **Minn., Winona**—INDUSTRIAL ARTS, etc.—State College Bd., 41 Sherburne Ave., St. Paul, industrial arts bldg. **$1,134,000**, heating plant **$630,000**, State College. Work to begin within two years.

▲ **N. Y., Dobbs Ferry**—SCHOOL—Bd. Educ. plans by Knappe & Johnson, 2 Overhill Rd., Scarsdale, N. Y., elementary school. **$1,000,000**. Matthew Hiller, Jr., 207 E. 32nd St., New York, Zone 1, structural engr. Albert Fentzlaff, Inc., 111 Brodaway, New York, Zone 6, mechanical engr. Bids in October. CD 4/24.

▲ **N. Y., Greenburgh**—SCHOOL—Greenburgh School District No. 8, Warburg Campus, Hartsdale, plans by Perkins & Will, 55 Church St., White Plains, Junior-Senior High School. **$3,600,000**. Seeley, Stevenson, Value & Knecht, 1018 Park Ave., New York Zone 17, structural engrs. Marvin H. Segner, 55 Church St., White Plains, mechanical engr. Bids end of December.

▲ **O., Columbus**—SCHOOLS—South-Western Bd. Educ., 1390 Harrisburg Pike, defeated bonds July 7, schools **$1,500,000**. CD 4/1.

▲ **O., Columbus**—HOUSING—State Dpt. P. Wks., State Dpt. Bldg., plans by Tully & Hobbs, 582 Oak, housing for married students (second) Olentangy River, State University. **$1,800,000.** CD 11/19/56.

▲ **O., Columbus**—SCHOOLS—Bd. Educ., 270 E. State St., bond election Nov. 3, schools. **$29,850,000.** CD 9/19/56.

▲ **O., Delaware**—SCHOOLS—Bd. Educ., bond election Nov. 3, schools. **$1,975,000.** CD 11/15/57.

▲ **O., Reading**—SCHOOLS—Reading City School Dist., bond election Nov. 3, schools. **$2,100,000.**

▲ **O., Sebring**—SCHOOLS—Mahoning Valley School Dist., Sebring, bond election Nov. 3, schools. **$1,450,000.** **(Correction**—owner). CD 7/1.

▲ **O., Steubenville**—SCHOOLS—City School Dist., bond election Nov. 3, schools. **$4,000,000.**

▲ **O., Wilmington**—SCHOOLS—Bd. Educ., Lorish St., plans by Sullivan, Isaacs & Sullivan, 1800 Reading Rd., Reading, two elementary schools. **$1,000,000.** CD 11/11.

▲ **R. I., Newport**—HOUSING—City Housing Auth., Park Holm St., housing for elderly, Pond Ave. Section and Chapel Terrace, **$1,160,475.** Constr. 1960.

▲ **R. I., Providence**—SCHOOL—City, School Bldg. Comn., City Hall, plans by Creer, Kent, Cruise & Aldrich, Industrial Bank Bldg., Mary E. Fogarty Elementary School, Ozford, Slaes and Miner Sts., South Providence, **$1,000,000.** Constr. 1960.

▲ **Tex., Austin**—ART and MUSEUM—University of Texas, Main Admin. Bldg., plans by Kuehne Brooks & Barr, 203 Perry Brooks Bldg., Austin, art and museum. **$1,500,000.** CD 11/27/57.

▲ **Tex., Corpus Christi**—HOSPITAL—City of Corpus Christi, City Hall and Nueces County, Courthouse, plans by Smyth and Smyth, Gulf Security Bldg., 250 bed Memorial Hospital expansion **$5,000,000.** O'Connell & Probst, 504 W. 7th St., Austin, consult. engrs. Rob. L. Vogler, 225 Oleander St., Corpus Christi, assoc. engr.

▲ **Tex., Lubbock**—CITY HALL—City, bond election Sept. 10, city hall. **$1,650,000.** CD 9/26.

▲ **Tex., Nacogdoches**—STUDENT UNION—Stephen F. Austin State College, plans by Wilbur Kent & Floyd Marsellos, Lufkin, student union, cafeteria. **$1,000,000.** CD 3/19.

▲ **Tex., West Columbia**—SCHOOL—West Columbia-Brazoria Ind. School Dist., Junior Senior High School. **$1,670,000.** CD 2/10.

▲ **Vt., Burlington**—LIBRARY—University of Vermont, 85 S. Prospect St., plans by Roland M. Whittier, 108 Shelburne St., library, East Campus. **$2,000,000.** (Correction—architect). CD 12/31.

▲ **Vt., Waterbury**—HOSPITAL—State Vermont State Bldg. Council, State House, Montpelier, plans by Webber & Erickson, 56½ Merchants Row, Rutland, State Hospital addn., **$1,500,000.** Constr. 1960.

▲ **Man., Fort Garry**—STUDY CENTRE, etc.—University of Manitoba, Fort Garry, adult study centre, 8 story hotel-residence, Fort Garry Campus, **$1,000,000.**

▲ **Ont., Toronto**—APARTMENT—Metropolitan Toronto Housing Co. Ltd., 67 Adelaide St. E., 10 low rental apartments, **$1,260,000.** CD 6/26/46.

▲ **Que., Riviere du Loup**—SCHOOL—Dpt. Social Welfare & Youth, Parliament Bldgs., Quebec City, technical school, **$1,000,000.**

COMMERCIAL BUILDINGS

▲ **Calif., San Francisco**—DORMITORY—University of San Francisco, 2130 Fulton St., men's dormitory. **$786,000.**

▲ **Calif., Sausalito**—APARTMENT—William H. McDevitt, 1934 4 St., San Rafael, 69 unit apartment, Shelter Cove, Yacht facilities and beach, off-street parking, **$1,000,000.**

▲ **Colo., Glendale**—MOTOR HOTEL—Cherry Creek Inn, Inc., 1737 S. Spruce, Casper, Wyo., plans by Breisford & Childress, 370 West 7 Ave., Denver, 2 and 3 story motor hotel, Colorado Blvd. and Cherry Creek Drive, **$2,000,000.**

▲ **Colo., Golden**—COUNTRY CLUB—Whispering Hills Country Club, Inc., 4220 King St., Denver, plans by John Milan, 9200 West Colfax, Denver, two 1 and 2 story, club houses, two heated swimming pools, 150 ft. T-bar, ski lift, golf course, Country Club near Lookout Mountain (Cody Park). **$2,000,000.**

▲ **Conn., New Haven**—MARKET—New Haven Exchange, Inc., 50 Hill St., plans by Caproni Assocs., P. O. Box 1857, produce market, **$2,000,000.** Henry A. Pfisterer, 111 Whitney Ave., consult. engr. CD 6/12.

▲ **Conn., Old Saybrook**—APARTMENTS—John E. Hayes, 170 Sibourney St., Hartford, plans by Irving W. Rutherford, 49 Garden St., Hartford, twenty-five 2 story Georgian colonial architecture, apartments, **$1,000,000.** A. D. Horn, 919 N. Main St., West Hartford, consult. engr. CD 6/10.

▲ **Conn., Stamford**—OFFICE—Carol Management Co., Roxbury Rd., plans by Robert Bien, 342 Madison Ave., New York, N. Y., 5 story, 125,000 sq. ft. office, air-conditioned. **$1,000,000.** CD 2/25.

Ga., Atlanta—APARTMENT—Southern Snydicate, Inc., c/o John Cherry, archt., 1429 Peachtree St. N. E., apartment **$800,000.** Harry Hunter, Candler Bldg., consult. engr.

▲ **Hawaii, Honolulu**—APARTMENT—Ann Grubb Ltd., Mezz 10, Alex Young Hotel Lobby, apartment. **$4,000,000.** Tai Constr. Co., 923 Kawaiahao, consult. engr.

▲ **Hawaii, Honolulu**—APARTMENT—Hawaiian Pacific Homes, 843 Fort St., 6 story, apartment **$3,000,000.**

▲ **Ill., Chicago**—APARTMENT—Bee-Gee Builders, 5927 W. Addison St., plans by Guy C. Parker, 2772 Skokie Valley Hy., Highland Park, 20 story, 250 x 263 ft. apartment, Sheridan Rd. and Devon Ave. **$10,000,000.** Bids early 1960.

▲ **Ill., Lincolnwood**—HOTEL—Jack Pritzker and others, 134 N. LaSalle St., Chicago, Zone 2, plans by Friedman Alschuler & Sincere, 223 W. Jackson Blvd., Chicago Zone 6, bi-level hotel, Touhy Ave. and Lincoln Rd., **$3,000,000.**

▲ **Ill., Mt. Prospect**—SHOPPING CENTER—Randhurst Corp., c/o 150 State St., Chicago, Zone 3, shopping center, Carson Pirie Scott & Co., Montgomery Ward and R. C. Wieboldt Stires, Inc., on 80 acres. **$18,000,000.**

▲ **Ky., Owensboro**—EDUCATIONAL BLDG., etc.—First Baptist Church, 3rd and Lewis Sts., plans by Clifton J. Marshall, Union Sta. Bldg., **(A)** 5 story, brick religious education bldg. **(B)** remodeling, alterations to church auditorium. **$1,300,000.** Engineering Services, Rte. 2, Hopkinsville, consult. engrs.

▲ **Ky., Louisville**—HOTEL—Fred C. Walters & Lawrence Jaffee, 510 W. Norman, Cincinnati, O., plans by Carlos B. Schoeppel, 2701 Biscayne Blvd., Miami, Fla., 4 story executive hotel, State Fair Grounds. **$3,000,000.** CD 8/29.

▲ **Mo., Lemay (St. Louis 25 P.O.)**—SHOPPING CENTER, etc.—Owners, c/o Gerald Ulrici, 5340 Chippewa St., St. Louis, Zone 9, and William Jonas, 134 N. LaSalle St., Chicago 2, Ill., plans by Sidney H. Morris & Assocs., 134 N. LaSalle St., Chicago 2, Ill., 215,000 sq. ft. Lemay Plaza Shopping Center, incl. 2 story medical bldg., bank, branch post office, junior department store, 32-lane bowling alley, parking areas, Lemay Ferry Rd. US 57, Ripa Ave. **$4,000,000.** Constr. probably summer 1960.

▲ **N. Y., Mahopac**—HOSPITAL—Mahopac Hospital, c/o Eggers & Higgins, archts., 100 E. 42nd St., New York, Zone 17, hospital, **$1,000,000.**

▲ **N. Y., New York**—OFFICE—Dewey Carver, 51 E. 42nd St., Zone 17, plans by Sylvan Bien, 342 Madison Ave., Zone 17, 40 story office, southwest corner Church and Murray Sts. **$18,000,000.** CD 7/9/58.

▲ **N. Y., New York**—APARTMENT—London Constr. Corp., 271 Madison Ave., Zone 16, plans by Sidney Goldhammer, 44 W. 56th St., Zone 19, apartment, 418-28 East 80th St. **$1,270,000.**

▲ **N. Y., New York**—APARTMENT—Municipal Office Workers Credit Union, Municipal Bldg., Zone 7, plans by Kelly & Gruzen, 10 Columbus Circle, Zone 19, Chatham Towers Housing Project-Park Row extension, two 2 story apartments, Mulberry and Worth Sts. **$4,500,000.** Herman Scherr, 18 John St., Zone 7, mechanical engr. Weinberger-Frieman-Leichtman & Quinn, 20 Vesey St., Zone 7, structural engrs. CD 1/6/56.

▲ **N. Y., New York**—OFFICE—New York Life Insurance Co., 51 Madison Ave., plans by Carson & Lundin, 425 Park Ave., office, Madison Ave., E. 27 and 28 Sts. **$8,000,000.**

▲ **N. C., Burlington**—HOSPITAL—Memorial Hospital, c/o Wm. M. Weber, archt., 1918 Hillsboro St., Raleigh, hospital, **$1,700,000.** C. C. Landstreet, 1010 Oberlin Rd., Raleigh, consult. engr.

▲ **N. C., Laurinburg**—COLLEGE—Presbyterian Synod of North Carolina, 2001 Fairview Rd., Raleigh, plans by A. G. Odell, Jr. & Assocs., 109 W. 3rd St., Charlotte, dormitory, **$750,000;** administration bldg., **$500,000;** Academic bldg., **$500,000;** student activities bldg., **$500,000,** all at Presbyterian College.

▲ **N. C., Rocky Mount**—COLLEGE—North Carolina Wesleyan College, Rocky Mount, plans by Lashmit, James, Brown & Pollock, 865 W. 4½ St., Winston-Salem, student union bldg., **$500,000;** women's dormitory, **$500,000;** men's dormitory, **$600,000.** CD 9/30/57.

▲ **O., Akron**—HOUSING—First Medina Builders, Inc., Housing, 3 year program homes Albrecht Ave. between Samuel Rd. and Mogadore corporation line. **$3,000,000.**

▲ **O., Canton**—GYMNASIUM—Malone College, 515 25th St. N. W., plans by Arnold A. Peterson, 1468 W. 9th St., Cleveland, Zone 13, gymnasium, **$520,000.** Bids in August. CD 3/12; Timken Science Hall, **$500,000.** Bids in Fall. CD 2/8/56.

▲ **O., Cleveland**—SHOPPING CENTER—Gimp Realty Co., 700 Hanna Bldg., Zone 15, plans by Arthur Hemlock, 10010 Euclid Ave., Zone 6, shopping center, E. 188th St. and Superior Ave. **$1,500,000.** Constr. in Fall.

▲ **O., Silver Lake (Akron P.O.)**—OFFICE CENTER—Phil J. Franz & Assoc., 2388 W. Market St., Akron, office center. **$1,500,000.**

▲ **Pa., Pittsburgh**—APARTMENT—1000 Grandview Street, Inc., c/o Tasso G. Katselas, archt., 3504 5th Ave., 70 unit apartment, Mt. Washington. **$1,000,000.** Gensert-Williams & Assocs., The Arcade, Cleveland, O., consult. engrs.

▲ **Tenn., Nashville**—HOME SUBDIVISION—Charles Wheeler, Whites Creek Pike, 2,100 home subdivision, Dickerson Rd. **$3,000,000.** J. R. Wauford, 2835 Lebanon Rd., consult. engr.

▲ **Tex., Dallas**—BANK-OFFICE—City State Bank of Dallas, 1114 Commerce St., 20 story, bsmnt., masonry bank-office, Commerce, Field, Jackson and Kendall Sts. **$8,500,000.**

▲ **Tex., Houston**—DWELLINGS—Canterbury Village, c/o D. H. Canterbury & Jno. Brown, Developers-Builders, 1201 Almeda-Genoa Rds., 41 dwellings **$468,400,** 38 dwellings **$453,875,** 31 dwellings **$578,500,** 36 dwellings **$448,475,** 34 dwellings **$439,700,** 32 dwellings **$418,000,** 2nd section, Canterbury Village Subdivision.

▲ **Wis., Beloit**—MOTEL, etc.—Wiljobar Corp., Beloit & Boss Hotels, Rockford, Ill., plans by Knodle & Baucom, 312 Strong Bldg., motel, swimming pool, **$1,000,000.** Constr. 1st phase in 1959. Beling Engineering Consultants, 306 Park Ave., Rockford, Ill., consult. engrs.

▲ **Wis., Milwaukee**—APARTMENT—Mortgage Associates, Inc., 125 E. Wells St., Zone 2, 14 story, penthouse apartment, **$3,000,000.** Constr. in 1960.

▲ **Que., Montreal**—OFFICE—2222 Guy St. Building, c/o Normand C. Gagnon, archt., P. O. Box 119, Boecherville, 15 story, L-shaped, 75 x 240 ft., 3 bsmnt floors, 250,000 sq. ft. office, Guy St. **$5,500,000.**

INDUSTRIAL BUILDINGS

▲ **Calif., Palos Verde**—RESEARCH LABORATORY—Nortronics Div., Northrup Corp., 500 E. Orangethorpe St., Anaheim, plans by Charles Luckman Assocs., 9220 Sunset Blvd., Los Angeles, Zone 16, 150,000 sq. ft. research laboratory, Palos Verdes Research Park. **$4,000,000.**

▲ **Calif., Vernon**—PLANT—Aluminum Co. of America, 5151 Alcoa Ave., plant addn., incl. 5,200 ton extrusion press. **$5,000,000.** CD 1/28/57.

▲ **Ill., Chicago**—PLANT—Victor Aeronautical Works, 155 N. Wacker Dr., chemical plant, Lake Calumet Harbor, **$2,000,000.**

▲ **La., Baton Rouge**—PLANT—Noralyn Paper Mills, Fidelity National Bank Bldg., 400 ton paper plant, West Baton Rouge. **$30,000,000.** Barnard & Burk, Inc., 1023 Nicholson Dr., consult. engr.

▲ **Md., Baltimore**—PLANT—General Motors Co., 3044 W. Grand Blvd., Detroit, Mich., 850,000 sq. ft. plant for Chevrolet Div. and 170,000 sq. ft. plant for Fisher Body Div. **$5,000,000.** To go ahead 1959.

▲ **Mass., Fitchburg**—PLANT—Fitchburg Paper Co., Fitchburg, 1 story plant for Decotone Div. **$1,000,000.** Constr. 1959.

▲ **Mich., Highland Park**—PLANT—Ford Motor Co., Tractor & Implement Div., 2500 E. Maple St., Birmingham, 1 story, 420 x 563 sq. ft. masonry aluminum plant addn. **$1,500,000.** Bids in 2 weeks. CD 2/20/57.

▲ **Mich., Saginaw**—PLANT—Saginaw Steering Gear Div., General Motors, General Motors Bldg., Detroit, plans by Argonaut Realty Div., General Motors Corp., Argonaut Bldg., Detroit, Mich., 1 story, brick, aluminum plant addn. Over **$2,000,000.** CD 11/17/55.

▲ **N. J., Dixon**—LABORATORIES, etc.—Dixon Chemical & Research, Inc., 1260 Broad St., Bloomfield, laboratories and office, Doremus Ave. **$2,000,000.**

▲ **N. C., Chapel Hill**—RESEARCH CENTER—Chemstrand Corp., Decatur, Ala., plans by Wigton-Abbott Corp., archts.-engrs., 1225 South Ave., Plainfield, N. J., research center, Research Triangle Park, near here. Over **$1,000,000.** CD 6/2.

▲ **O., Akron**—RESEARCH LABORATORY—General Tire & Rubber Co., 1708 Englewood, research laboratory. **$1,500,000.** H. K. Ferguson, 1783 E. 11th St., Cleveland, Zone 14, consult. engr. CD 7/8.

▲ **Tenn., Gleason**—PLANT—Gleason Brick Works, Gleason, brick plant, **$1,000,000.**

▲ **Tenn., Nashville**—PARKING GARAGE, etc.—Castner-Knott Department Store, Church St., plans by Marr & Holman, Stahlman Bldg., 2 level parking garage and store addn. **$2,500,000.**

▲ **Va., Galax**—PLANT—P. H. Hanes Knitting Co., 601 N. Main St., Winston-Salem, N. C., knitwear mfg. plant. **$1,000,000.**

▲ **Man., Winnipeg**—PLANT—Building Products Ltd., Point Douglas, paper mill plant, building products plant expansion. **$1,000,000.**

UNCLASSIFIED

▲† **Calif., Edwards**—BUILDING ADDNS—National Aeronautics & Space Admin., Edwards Flight Station, bldg. addns. and analog computing equipment and terminal guidance facility at High-speed flight station. **$2,805,000.**

▲ **Calif., San Francisco**—PARK—City and San Francisco County, City Hall, **$2,970,000** bond election Nov. 3, park, at Ferry Bldg., Embarcadero. CD 11/11.

▲ **Ga., Augusta**—RACE TRACK, etc.—Augusta National Sports Co., c/o Baldwin Engineering Co., consult. engr., 823 Greene St., race track, football field and baseball diamond. **$1,800,000.**

▲ **New York**—GAS PIPE LINE, etc.—New York State Natural Gas Corp. (subsidiary of Consolidated Natural Gas Corp.), 30 Rockefeller Plaza, New York, Zone 30, 29.5 mi. 20 in. gas pipe line, incl. 2 regulating and measuring stations, Buffalo. **$1,649,300.**

▲ **N. Y., Canandaigua**—RACE TRACK—Finger Lakes Racing Assn., c/o Arthur Froelich Assocs., 203 S. 15th St., Phila., Pa., race track. **$6,000,000.**

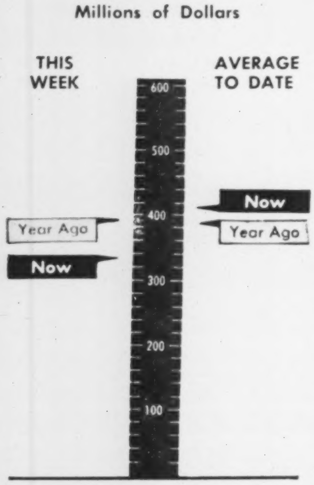
▲ **Texas**—GAS MAIN—Lone Star Gas Co., 301 S. Harwood St., Dallas, 36 mi. 20 in. gas main from near Duncanville, Dallas Co. to 3 mi. north of Chatfield Navarro Co. **$1,080,000.** CD 1/10/56.

▲ **Texas**—COMPRESSOR STATION, etc.—Texas Eastern Transmission Corp., Memorial Prof. Bldg., Houston, 7,500 hp. compressor station, Longview start of Big Inch Line, Gregg Co. **$2,250,000;** gas connecting lines, area Longview, **$150,000.**

(Proposal Advertisements see pp. 78 to 80)

Construction Scoreboard

CONTRACTS ...



AMOUNT OF CONTRACTS LET

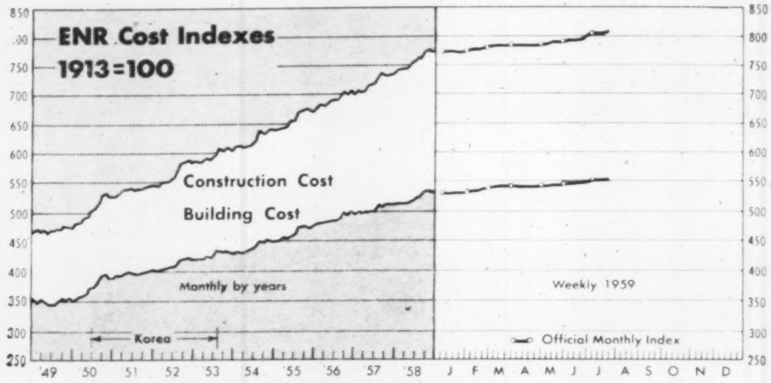
	This Week	Cum. 31 wks 1959	Chge '58-'59
	millions		%
All Heavy Constr.	$331.5	$12,830.1	+ 6
By Ownership			
PRIVATE	140.9	6,195.7	+24
PUBLIC	190.6	6,634.4	− 7
State & Municipal	139.5	4,732.8	− 6
Federal	51.1	1,901.6	− 9
By Type of Work			
PUBLIC			
Waterworks	6.0	268.2	+35
Sewerage	13.3	404.1	+11
Bridges*	9.6	481.0	+13
Highways	80.9	1,932.5	− 1
Earthwork, Dams & Waterways	4.7	575.0	−21
Buildings			
Excl. Housing	56.5	1,647.1	0
Housing	4.0	461.2	−46
Unclassified	15.7	872.7	− 9
PRIVATE			
Buildings			
Mass Housing	52.9	2,846.7	+18
Commercial	55.8	1,389.6	+18
Industrial	26.1	1,645.5	+46
Unclassified	6.0	306.5	+12

*Includes private bridges

NOTE: Minimum size projects included are: Waterworks and waterways, $53,000; other public works, $88,000; industrial buildings, $110,000; other buildings, $400,000.

CAPITAL . . .

New Capital For Construction	Week of July 23	Cum. 30 wks 1959	Chge '58-'59
	millions		%
Corporate Securities	$ 76.0	$2,352.4	−30
State and Municipal:			
All except housing	112.7	3,732.3	− 5
Housing	....	75.2	+123
Federal Loans	....	87.7	−20
Federal Aid	....	.....	....
Total Nonfederal	$188.7	$6,265.6	−16
Federal Appropriations:			
Projects in U. S.	$144.1	$182.4	−79
Outside U. S.	0.4	0.4	−94
Total New Capital	$333.1	$6,448.3	−22



CURRENT COST INDEXES

ENR INDEXES (1913=100), 20-cities' average	Week of July 23 1959	% Change from June 25 1959	% Change from July 24 1958
Construction Cost	812.66	+1.0	+6.4
Building Cost	555.54	+0.8	+5.7

To convert above indexes to 1926 = 100: Divide Construction Cost by 2.080; Building Cost by 1.850
1949 = 100: Divide Construction Cost by 4.770; Building Cost by 3.518

BACKLOG OF PROPOSED HEAVY CONSTRUCTION

	June 1959 (millions)	Percent Change from last Month	Percent Change from last Year
Total U. S. (ENR reported)	$114,132	−0.4	+1.9
By Ownership—			
Private	49,807	+0.1	+4.2
State & Municipal	50,810	−0.6	+0.1
Federal	13,515	−1.5	+0.9
By Type of Work—			
Waterworks	2,693	+0.2	+1.2
Sewerage	3,602	−0.8	+5.4
Bridges	3,368	−0.04	−0.9
Highways	12,813	−1.9	−3.6
Earthwork, Waterways	11,694	−0.4	−0.2
Public Buildings	20,588	−0.7	+3.0
Industrial Buildings	16,903	−1.0	+2.3
Commercial Buildings	22,461	+0.4	+5.0
Unclassified, Private	10,443†	+1.0	+5.6
Unclassified, Public	9,567	−0.6	−1.3

† Includes private bridges, $91 million

FLOW OF NEW PROJECTS INTO THE BACKLOG

	1959 June	1959 6-months	Percent Change from '58 June	Percent Change from '58 Year Cum.
	(millions)			
Total U. S. (ENR reported)	$1,078	$9,707	− 1.7	+ 19.1
By Ownership—				
Private	661	5,201	+ 4.1	+42.1
State & Municipal	371	3,745	−11.8	− 3.6
Federal	46	761	+10.6	+26.0
By Type of Work—				
Waterworks	20	228	+71.6	−36.0
Sewerage	31	306	+15.6	− 9.4
Bridges	28	244	+166.7	− 2.3
Highways	60	978	−42.1	− 4.2
Earthwork, Waterways	14	117	+1,521.3	− 9.2
Public Buildings	237	2,060	−15.2	+16.6
Industrial Buildings	128	1,655	+40.3	+143.3
Commercial: Mass Housing	215	1,562	+ 2.2	+38.3
Other Building	173	1,332	−37.3	−19.1
Unclassified, Private	146*	652**	+150.2	+219.2
Unclassified, Public	27	574	− 3.8	− 9.0

*Includes private bridges $0.5 million
**Includes private bridges $8.2 million

FLOW OF PROJECTS OUT OF THE BACKLOG INTO CONTRACTS

	June	6-months	June	Year Cum.
Total U. S. (ENR reported)	$904	$5,283	−14.7	+ 1.8
By Ownership—				
Private	296	1,784	+16.5	+13.7
State and Municipal	412	2,312	−23.6	−14.3
Federal	195	1,187	−26.4	+28.6

States Battle Income Problems

- **Some are postponing starts pending lower interest rates and filled coffers.**
- **One state wants flexibility in borrowing; another wants Interstate formula cut.**

Income that isn't meeting estimates and a tightened money market are bringing cutbacks in construction plans in some states; in others, just problems.

Most attention is focused on Michigan where a political battle has prevented the levying of new or added taxes to keep the government in full operation. One construction project under way has already been halted because of lack of funds (ENR July 16, p. 143).

But other states are also postponing new construction starts until their financial condition is more fully appraised.

In Illinois, Gov. William G. Stratton ordered a freeze on $80 million worth of new public building construction authorized by the recently adjourned state legislature.

But he did sign a bill calling for $43 million worth of building projects. Rather than kill construction items, he says he will just freeze money outlays for at least six months. There are no indications that additional new projects will be postponed. Nor will funds for projects under way be withheld. Work on these will continue as scheduled.

The six-month postponement will give the administration time to determine if tax income is ahead of the estimates made last April, when the budget was being prepared.

Total Illinois appropriations for the two-year fiscal period are expected to exceed anticipated revenue by $123 million, state financial authorities say.

The Illinois legislature increased the state sales tax to bring in an additional $106 million, but this money is earmarked for schools. The $80 million in frozen funds would come from general revenues and applies only to those projects paid for out of the general fund. Highway construction will not be affected. Its revenues come mainly from motor fuel taxes, which are earmarked for roadbuilding.

Florida will also postpone some of its planned new construction projects. The state legislature approved measures calling for construction projects totaling $57.5 million. Of this, $27 million is earmarked for schools.

However, only $12 million to $13 million worth of the state building projects authorized will be started this year. The high cost of money is to blame, says State Budget Director Harry Smith.

This situation was dramatized recently when $12 million worth of Florida school bonds were put up for bid. There was only one bidder—for $830,000 of the total. The remaining bonds are still awaiting action, but interest rates will have to decline steeply before they are finally sold. There is a 4% interest rate ceiling on school bonds, which accounted for the dearth of bidders.

Bond problems also face Jefferson Parish, La., which rejected bids for the second time on $10 million worth of its school bonds because of the high rate asked. Lowest net interest rate offered the first time was 4.813%; the second time, 4.724%.

In Pennsylvania, the State Public School Building Authority is requesting approval of a plan it believes will allow it to take better advantage of changing conditions in the money market.

Now, the authority must borrow all construction funds through the sale of long-term bonds. This means that if an issue is sold at today's high interest rates, the high charges are maintained for the full life of the bonds.

But under the proposal, the authority would be allowed to negotiate with banks for short-term loans, which could be repaid when long-term interest rates declined. Then the authority could enter a more favorable long-term borrowing market by selling bonds.

This flexibility over a long period of years could "save millions of dollars in interest costs," according to Charles C. Smith, state auditor general and chairman of the authority's Special Committee on Finance.

Vermont is trying to ease the pressures of financing its highway construction. In an undoubtedly futile move, the state formally asked Congress to cut the state's contribution to Interstate System costs to 2.5% instead of 10%.

The legislature also agreed to reconvene Jan. 12, 1960, for the sole purpose of adopting legislation to finance highway construction. It will be the first time the Vermont legislature has departed from biennial sessions.

Gov. Robert T. Stafford prevailed upon the lawmakers not to increase fuel levies until neighboring states had boosted theirs. He said adjoining states would make the move, but until they did, Vermont should remain competitive. He was right in two instances. Of the three adjoining states, New York and New Hampshire raised motor fuel taxes; Massachusetts was planning to raise its levy, but just decided against it because the highway fund now shows a $3.6-million surplus instead of an anticipated $530,000 deficit.

In approving the resolution to Congress, the lawmakers argued that Vermont's highway financing difficulties stem directly and solely from participation in the federal highway program.

The resolution says that Vermont, with a population of less than 400,000, has .0022% of the national population available for tax money contributions. But with 321 miles of Interstate highway scheduled, the state has to construct and maintain .0083% of the national Interstate mileage.

Strike Threat Boomed June Structural Shipments

Structural steel fabricators moved fast in June to get steel to contractors before many fabricating shops were shut by the steel strike.

In June, they moved out the largest tonnage since October 1957, scoring one of the biggest monthly totals on record—365,434 tons.

The two weeks' extension of the steel strike deadline to July 14, probably resulted in structural steel shipment tonnages equal to the pace of June. This would put contractors in a good position to maintain third quarter schedules.

Many had ordered third quarter needs for June 30 delivery. The extended deadline helped on late deliveries.

As the time for the strike approached, contractors boosted orders for fabricated steel. June bookings by fabricators rose 20% above May, to 290,911 tons. This was also above June 1957 and 1958.

(*B&F continued p. 72*)

Airport, A-Plant Awards Climb

Airports and A-power showed up with fat contract award totals in this year's first half. A-plants are now construction's fastest-growing market.

Atomic power plant awards in the first half totaled $263 million, four times the volume of the same period in 1958. The total also exceeds the 12-month tallies for every year since 1952, the last big year for federal A-plant contracts.

Although federal atomic plants account for the bulk of the total for the second consecutive year, private nuclear plants show the sharpest rise—461%.

And in ENR's Backlog of Proposed Work, private atomic plants are on the rise again. As of June 30, private plants with an estimated construction cost of $250 million were in the active planning stage. That's 14% higher than the backlog one year ago. It's a sign that a further rise is ahead for the private atomic plant construction market.

Private A-power contracts for the first half were pushed to a total of $96.2 million with the award of a $30-million contract in June to Bechtel Corp., San Francisco. Owner is Consumers Power Co., Jackson, Mich.

Federal atomic plant contracts added $11.3 million in June, to bring the six-month public total to $167.1 million. That exceeds the 12-month totals of each year from 1953-58.

Atomics International, Division of North American Aviation, Inc., Downey, Calif., obtained the two largest federal contracts awarded in June; a $7.7-million design and construction contract for a nuclear power plant for Piqua, Ohio and a design and construction contract for a nuclear research and treatment reactor at Walter Reed Army Medical Center, Washington, D. C.

Airport contracts in the first half totaled $535 million, a 7% rise over last year. This indicates that airport contracts for all of 1959 may top $1 billion for the first time since World War II.

Biggest 1958-59 gains are in county, city and private airport awards. Missile facilities at Air Force bases account for most of the rise in federal contracts. Only dark spot in the airports outlook is the delay in allocating federal-aid funds, which stems from the late Congressional authorization.

Federal contracts in the first half totaled $456 million. Private airport awards tallied $14.2 million, and county and city awards, $64.1 million.

Levitt Loses Antibias Round

A New Jersey law barring discrimination in the sale of housing on the basis of race, creed or nationality was upheld last week by the state's Superior Court.

The ruling is a setback for homebuilder William J. Levitt, who had refused to sell houses in Levittown III to Negroes. Also affected is Greenfield Farms, Inc., of Woodbury, N. J.

The court ruled that the law, which prohibits discrimination in the sale of houses financed by government-backed mortgages, applies to Levitt and Greenfield Farms. It ordered New Jersey's Division Against Discrimination to proceed with hearings on the complaints filed against the two builders (ENR July 3, 1958, p. 82).

The builders have fought a year-long legal battle to keep Levittown III and Greenfield Acres "all-white" communities. When the Division Against Discrimination failed to persuade the Levitt firm to change its sales policy, the agency scheduled public hearings. The hearings were never held because of a succession of court suits and appeals in which the builders sought to have the New Jersey law overturned.

On the heels of the court's decision, the New Jersey Committee Against Discrimination in Housing urged extension of the law to cover housing bought with conventional mortgages, as well as those bought with mortgages insured by the Federal Housing Administration or guaranteed by the Veterans Administration.

New York State may also extend its anti-bias housing laws to houses financed with conventional mortgages. The current state law applies to multiple dwellings and developments of 10 or more adjacent houses built, bought or repaired with government-backed financing. The law now being proposed by Gov. Nelson A. Rockefeller for action next year would be similar to New York City's law. It applies to housing of all types, financed by any means.

Other states with antidiscrimination laws on housing are Oregon, Massachusetts, Washington, Connecticut, Colorado and California. The last three states enacted their measures this year.

Rhode Island's legislature considered such a measure this year, but it was defeated unexpectedly.

Reversed Trend

Housing industry stalls mobile home market drive

Mobile home manufacturers' hopes of capturing a larger share of the housing market are being dimmed.

Major reasons for this apparently are easier home mortgage financing terms and improved production methods of conventional homebuilders and prefab housing producers.

In each year from 1954 through 1956, mobile homes took a bigger bite out of the housing market measured in terms of private housing starts (ENR Jan. 16, 1958, p. 40).

In 1954, private housing starts totaled 1.2 million. Of this total, prefab manufacturers accounted for 77,000 units or 6.4% of the market. Mobile homes, however, totaled 76,054 units, equal to 6.3% of private starts.

The following year, private starts climbed to 1.3 million. Prefabricated units claimed 7.1% of the market with shipments of 93,000 units. Mobile home producers, however, jumped shipments to 111,784, equal to 8.5% of private housing starts.

Then started two years of declining housing starts. They dropped to 1.1 million in 1956, with mobile home manufacturers also showing a shipments decline to 111,752. However, this total was equal to 10.2% of the market. Prefabricators took 8.7%.

Mobile home manufacturers hit their peak in 1957. Their shipments were equal to 11.6% of the nation's 992,800 housing starts. Prefabricated shipments of 93,546 claimed 9.4% of the market.

In 1958, the tables were turned. Housing starts jumped 15% to 1.14 million. Shipments of prefabricated housing units leaped 17.8% to 111,180 units, or 9.7% of private housing starts. But mobile home shipments dropped 9.4% to 104,000 units, equal to only 9.1% of the market.

The trend may continue this year. The prefabricated housing industry predicts shipments of at least 135,000 units. With housing starts at an annual rate of 1.37 million, prefabs may claim from 9.8% to 10% of the market.

Timing of the rise and fall in mobile homes indicates easier home financing and a shift in house-price brackets by builders brought the reversed trend. Last year, mortgage money was readily available, commitments were obtained for this year, and down payment requirements reached their lows. Also builders and prefabricators placed greater emphasis on lower-priced houses in 1958 and this year.

Drop in Housing Starts Forecast

The annual rate of private and public nonfarm housing starts will average 1,134,000 per year during 1959-63. That prediction comes from Dr. Reinhold Wolff, director of the Bureau of Business and Economic Research, University of Miami.

The 1959-63 average would be 7% less than the bureau's reported average of 1,219,000 units per year during the five years 1954-58. That total is 3% higher than the total reported by the U.S. Bureau of Labor Statistics. The university's research bureau uses some sources not covered by BLS to obtain more complete coverage of the market.

The latest estimate would mean a five-year total of 5,668,000 units, excluding rural farm and mobile homes. It also excludes Alaska and Hawaii.

Dr. Wolff's projection is based on the expected rate of household formation, housing inventory changes, vacancy rate, unemployment and availability of mortgage credit. Changes in the housing inventory result from demolition, fire losses, shifts from farm to nonfarm classification and conversions.

Actual demand for nonfarm housing is estimated at 1,135,000 per year—to house 960,000 additional households and replace 175,000 units. Mobile homes and other temporary quarters should take care of 50,000 of the total demand. That leaves a demand for 1,085,000 new, permanent nonfarm houses per year—49,000 short of the number of starts projected by the bureau. This shortage of demand, however, is only 4% of total supply and would cut the vacancy rate, currently at about 5½%, rather than increase it.

The trend of homebuilding will be to the South and West in the next five years the bureau says.

Although projected starts in the West will average 1.7% less in the next five years, this region will boost its share of the U. S. market to 25.2%. (The projection excludes Alaska.) The 1.7% decline in the region compares with an over-all U.S. housing dip of 7%.

A 5% decline in starts is projected for the South, but it will boost its share of the total market to 30.8%. This is the largest of all the regions.

The Northeast is expected to show a 10% decline in the number of nonfarm housing starts. This will pull its share of the total market to 18.4%, slightly below that of 1954-58.

Sharpest decline is forecast for the industrialized North Central region where starts may drop 12% and share of the U.S. market, 25.6%.

Housing starts in the Middle Atlantic states are expected to decline 10%. New England's projected total will drop 12% from the 1954-58 period.

Business in Brief . . .

- **To get contracts**—Construction and engineering companies that want contracts from the International Cooperation Administration must file "Experience Data form, Budget Bureau No. 22-R" with the Office of Industrial Resources, ICA, Washington, 25.

- **Toe the mark**—An ordinance of newly incorporated Richland, Wash., requires contractors to post a $5,000 performance bond and pay a $100 license fee.

- **Urban renewal upheld**—Texas' State Supreme Court ruled the state's urban renewal act is constitutional and that the City of Lubbock was within its rights to condemn property under a slum clearance program. A landowner in the affected area argued the city took private property for "public use."

- **Big-city budget**—New York City's Department of Public Works has proposed a 1960 capital construction budget of $131.4 million. The total includes $2.7 million for new work and $128.7 million for pending jobs.

- **Airfield plan dims**—Cincinnati may abandon its plan to construct an airport. Chances are the city will recoup its $4-million investment in property by selling the site for industrial use.

- **Construction company bought**—Nichols Construction Co., Inc., Baton Rouge, was bought by Yuba Consolidated Industries, Inc., of San Francisco. It will operate as a division of Yuba. Nichols specializes in field erection and industrial maintenance for the chemical, petro-chemical and petroleum industries.

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Labor

Showdown on Featherbedding

- **The steel industry has made wasteful work practices a key issue in its negotiations**
- **The outcome cannot help but affect other industries—construction included**

The construction industry has more at stake in the steel negotiations than a smooth supply of structurals and reinforcing bars.

One of the major issues in the steel dispute is wasteful work practices—a problem the construction industry has been trying to solve for several years.

Although work practices in the two industries are not identical, they do have many important similarities. Thus the outcome of the dispute in the trend-setting steel industry could well set a pattern—giving further impetus to the construction industry's own efforts.

Construction's most concrete approach to wasteful work practices so far is voluntary—through the "Ten Commandments." They were adopted as a policy statement at the national level last year. They are designed to eliminate wasteful work practices through cooperation of labor and management. As yet, however, the program has not been widely accepted at the local level.

Now the steel industry is attacking the same problem, with a different approach. The industry wants to write mandatory work practice reforms into the contracts now being negotiated with the steelworkers.

The United Steelworkers of America is offered a two-year contract, with increased pension and insurance benefits the first year and a "modest" wage increase the second year. In return, the industry asks the union to accept an eight-point plan aimed at curbing featherbedding and other costly practices. The steel companies claim acceptance of their proposal would result in a noninflationary agreement, with no net increase in wage costs.

Industry negotiators claim the eight points are intended to tighten up loose contract language, reduce grievances caused by varying interpretations, allow the companies greater freedom in initiating more efficient plant operations, and curb costly work practices.

There are indications steel would be willing to settle for several of the more important of the eight points, particularly the two that would "modify ambiguous and restrictive language" and impose further penalties for wildcat strikes and slowdowns.

Because of the union's refusal to accept a wage freeze, and the industry's refusal to sign contracts that would raise net wage costs, a compromise is required. So the industry's proposal may be accepted, at least in part.

If this happens, the steel industry will have mandatory controls over featherbedding practices — something the construction industry, for the most part, has not been able to achieve. Lack of centralized bargaining is the chief obstacle preventing contractors from getting antifeatherbedding provisions written into their labor contracts on a broad scale.

The chief drawback in construction's "Ten Commandments" is that there is nothing mandatory about them. They are merely a suggested policy that autonomous local unions and contractors can accept or reject. They were drawn up in January 1958 by the National Constructors Association and the 18 AFL-CIO international building trades unions. So far the program has not received wide acceptance on the local level, which is the only level at which they can become mandatory.

For this reason, the steel companies' attempt to impose mandatory controls on wastful work practices can be a milestone in labor relations.

Steel's demand for tighter control over work practices may turn out to be the first successful attempt by a major industry to reverse on a mandatory basis a trend of many years—the growing voice of labor unions in regulating plant or job operating procedures. Though steel industry officials are careful to point out that their aim is to loosen restrictions placed on them by the union, many management men call it an attempt to regain lost management prerogatives.

What makes the test particularly important is that it comes between a major industry and one of the most powerful of the international unions—and is therefore a possible patternsetter for all industry. The aluminum industry, for example, is apparently waiting to see what happens in steel before it negotiates its own contracts.

The similarity of the featherbedding problems in the steel and construction industries is striking.

- Both construction and steel are fighting the featherbedding problem against the backdrop of boom times. Steel companies are reporting record earnings, and construction activity is headed toward a near-record year.
- Both industries have a record of steep wage increases in recent years and their workers are among the most highly paid.
- Both industries experience wide variations in local working conditions.
- The reaction to the "Ten Commandments" by local building trades unions was generally similar to the greeting the steelworkers gave the eight-point proposal of the steel companies. Both groups claimed that putting such agreements into contracts is tantamount to admitting being guilty of featherbedding. And some union men in both industries claimed the proposals are unnecessary because the wasteful practices that are under attack are not widespread.

Even the two industries' proposals bear a strong resemblance. Both the "Ten Commandments" and the steel companies' eight-point proposal:

- Condemn wildcat strikes, work stoppages and slowdowns as costly.
- Seek to halt employee practices of coming late or quitting early.
- Attack employee-set limits on production. The steel industry particularly complains that employees "drag their feet" when incentive standards are being set.
- Ask greater freedom for management in making work assignments and in handling personnel. The steel industry, for example, wants to eliminate out-size crews and payment for time not worked and to regain the right to make efficient work assignments and to change work schedules. The construction industry, moving in the same direction, wants it understood that foremen are selected by management, that stewards should work, that stand-by crews and spread-work tactics can not be tolerated and that management's right to make work assignments not be hamstrung by jurisdictional work stoppages.

NLRB Hiring Mandate Criticized

Labor attorney says Mountain-Pacific decision courts lip service and hypocrisy. Urges realistic legislation.

The construction industry's "marriage to the Mountain-Pacific formula under the shotgun threat of the Brown-Olds disgorgement remedy is no more conducive to law and order than was the prohibition amendment."

That is the view of Harry H. Rains, Mineola, N. Y., attorney and labor relations consultant, on the construction industry's massive effort to clean up its hiring practices under the controversial mandate of the National Labor Relations Board.

Mr. Rains takes the position that the NLRB's attempt to apply an "ivory tower philosophy" to a very practical situation "can crumble the foundation upon which an industry vital to the nation's economy is based." He says it is driving labor and management to the "dangerous hypocrisy of surface compliance" and presents a "serious and major threat" to stable labor-management relations.

His analysis of the impact and implications of the new approach to union hiring halls appears in the current issue of "Labor Law Journal," published by Commerce Clearing House.

The big contribution of the board's cumbersome and unworkable formula may be to pinpoint "the sharp need" for Congressional action to give the construction industry labor legislation that fits the industry, Mr. Rains believes.

(One legislative step in this direction is the inclusion of several construction industry amendments in the labor reform bill approved by the House Education and Labor Committee by a vote of 16 to 14 last week. The bill would legalize pre-hire labor contracts, permit a seven-day union shop clause, relax the secondary boycott ban at common construction sites, allow unions to negotiate the right to refer job applicants, and authorize union referrals and referral priority based on minimum training and experience qualifications.)

Mr. Rains' central criticism of the present law on hiring practices is that it will not work because of the peculiar needs and habits of the construction industry. Result, he says, is to encourage lip service to the law, to promote risky and costly circumventions of all kinds, and to foster extensive litigation.

(In an effort to force the construction industry to abandon the closed shop, the NLRB last year set forth in the Mountain-Pacific case the minimum standards under which contractors and unions can use union hiring halls. Hiring discrimination in favor of union members is subject to a severe financial penalty known as the Brown-Olds remedy. Contractors and unions are still attempting, in their collective bargaining, to legalize their hiring practices. Often they are doing it by putting the main NLRB edict into their contracts almost verbatim.)

Two of the risks imposed by the board's interpretation of the law are ones contractors are still inclined to minimize or to overlook. One, according to Mr. Rains, is that even "bona fide, undenied good faith" on the part of contractors to comply with the law is no protection against the Brown-Olds remedy if a violation in fact occurs.

The other risk is that the board imputes responsibility for a violation even "in the absence of knowledge."

These two things alone put a contractor in the position of courting trouble with a union or of facing an unfair labor practice charge, Mr. Rains suggests, and saddle the contractor with an impossible policing burden that can lead only to labor strife.

Mr. Rains predicts that the Board's policy, until overturned by the courts or changed by Congress, will meet stubborn underground resistance from contractors and unions alike.

Root of the problem, he suggests, is that the industry is filled with highly mobile, prospective employers who offer a "checkerboard pattern" of job openings that can be filled only by a centralized hiring and job referral system run by the unions. He says the "time-tested, custom supported" union hiring hall is the only effective way of obtaining qualified men as needed.

From the union point of view, Mr. Rains says, the union hiring hall is the "only available substitute" for traditional seniority protection and is a practical way of accommodating genuine union aversion to working alongside nonunion men.

The two big questions that emerge from Mr. Rains' discussion are these: Can the industry operate without union hiring halls? Can any union hiring hall, as a practical matter, be nondiscriminatory in fact as well as in name?

Strikes Test Union Loyalty

How far does union loyalty and mutual support extend?

Union construction workers are now asking themselves that question in Kohler, Wis., and in some of the towns where steel mills have been closed by the steelworkers' strike.

In Wisconsin, the Kohler Co., which has been struck by the United Auto Workers union since 1954, is building a new $3-million building for the manufacture of engines and electric parts.

Permanent Construction Co. of Milwaukee has been awarded the general contract for the building. Concrete footings are being put in now. The project will take about a year to complete. Members of several of the AFL-CIO building trades unions are on the job.

UAW Local 833 has protested the crossing of its picket line by operating engineers, carpenters and laborers. Its complaint has gone not only to local construction unions in Sheboygan but also to national labor leaders, including AFL-CIO President George Meany. Said the union: "There can be no doubt but that these people are only the vanguard of union workers and that others will follow their example unless greater efforts (to persuade them not to) are made."

Meanwhile construction work being performed for some of the struck steel companies has been closed down. Union construction workers have refused to cross the steelworkers' picket lines.

All instances involve AFL-CIO unions. But they also involve bitter foes in the long-standing jurisdictional dispute between craft and industrial workers over industrial construction work. (That dispute is now focusing increased attention on the principle of "construction by contract.")

Complicating the problem of inter-union loyalty is the fact that the AFL-CIO has given its full support, as a federation, to both strikes.

(Labor continued p. 76)

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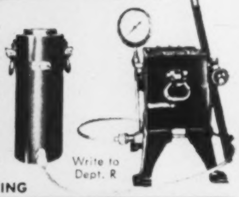

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Labor Peace Is a Local Matter

A jurisdictional dispute between sheet metal workers and electrical workers over the installation of a belt between a fan and a motor stalled work this month on the Chesapeake and Potomac Telephone Co.'s new $4-million office building in Charleston, W. Va.

The work stoppage demonstrates again how national efforts to overcome construction industry problems can fail unless fully supported at the local level. It does not, however, detract from the tremendous improvement in the field of jurisdictional disputes.

Here's how the dispute on the Charleston job developed: A subcontractor assigned to electrical workers the job of installing a fan belt in an air conditioning system.

Sheet metal workers, who have always installed the blades of fans, thought the work belonged to them. The electrical workers, who have always installed the motors, claimed the work was theirs. Only two or three hours of work were involved, a spokesman said.

In protest against the assignment, 22 sheet metal workers left their jobs and picketed. About 60 other workers honored the picket line.

The Charleston Building Trades Council called the walkout "unauthorized."

Consolidated Engineering Co., Inc., the general contractor, referred the dispute to the National Joint Board for the Settlement of Jurisdictional Disputes, which got the international to order the men back to work.

Pending action on the dispute, National Joint Board Chairman Richard Mitchell issued this reminder: "A job cannot be legally picketed because of a jurisdictional dispute."

Mr. Mitchell's statement and the action of the local building trades council both conform to the National Joint Board procedure. Under that procedure, disputes are supposed to be settled without work interruptions.

To accomplish that end, the top-level, union-management agreement under which the board operates outlaws jurisdictional strikes. All unions affiliated with the AFL-CIO Building and Construction Trades Department are required, as a result of action voluntarily and constitutionally taken by the department, to adhere to the Joint Board procedure, including the no-strike pledge. All international unions are required by the rules of the board to take "appropriate disciplinary action" against any union that posts picket lines for jurisdictional purposes, and other unions are forbidden to honor such picket lines.

Labor in Brief . . .

- **Hiring hall bargainable**—National Labor Relations Board General Counsel Stuart Rothman has ruled that a union may lawfully strike for the inclusion of an exclusive hiring clause in its labor contract if the clause meets the safeguards of the Mountain-Pacific case.

- **First to affiliate**—The Engineers Association at Sperry Gyroscope Co. has voted two-to-one in favor of affiliation with Engineers and Scientists Guild—a proposed national federation of unions for engineers, scientists and technicians. It is the first union to do so. EA approved the ESG constitution.

- **Labor and Wall Street**—Labor has invested about $16 billion of pension fund money in Wall Street corporate bonds and stocks, according to the New York State Department of Labor. Pension-plan reserves contain an estimated $40 billion.

- **NLRB tries self-analysis**—The National Labor Relations Board has set up a committee of board personnel and outside experts to suggest changes in board rules, regulations and procedures. Aim is to speed up and streamline the handling of labor disputes.

- **Wisconsin outlaws job bias**—Job discrimination against persons 40 to 65 years old is prohibited by a new Wisconsin law. Job discrimination, in the new law, deals with promotion, compensation, union membership, employment conditions.

- **Union promotes education**—The International Association of Bridge, Structural and Ornamental Iron Workers has established the John H. Lyons Scholarship Fund at Washington and St. Louis universities for the benefit of children of its union members. Grants cannot be less than $200 a year or more than $1,500.

AEC Work Struck

Hanford strike pinpoints secondary boycot issue

Secondary boycott charges have been filed against a local of the International Brotherhood of Electrical Workers because of a strike earlier this month at the Atomic Energy Commission's Hanford Works in Richland, Wash.

The strike situation is similar to the one that existed in the Denver Building Trades case, which the House labor bill would reverse.

The Hanford work stoppage began July 13, when the union set up picket lines in protest against the AEC's award of a $9,415 powerline construction contract to the Estep Line Construction Co., which has hired nonunion labor.

J. A. Jones Construction Co. filed the unfair labor practice charge against Local 77 and the Pasco-Kennewick Building Trades Council.

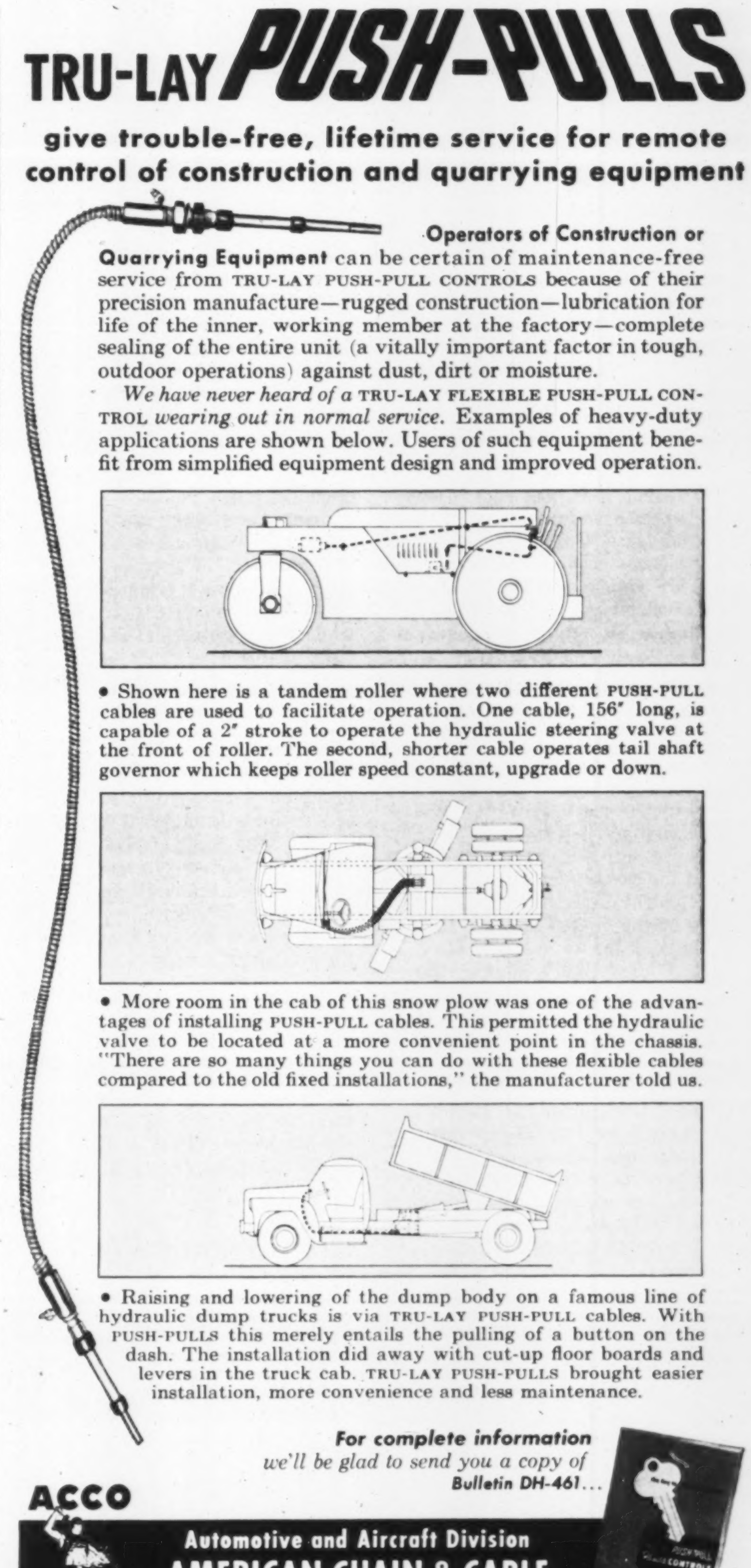
The company claims that most of the workers idled by the strike are employed by it and its subcontractors, none of whom have a dispute with the union.

In the Denver Building Trades case, decided by the U. S. Supreme Court in 1951, a Denver building project was struck when a subcontract was awarded to a nonunion electrical contractor who paid below-union scales. The other contractors on the job were unionized.

The court ruled that an illegal secondary boycott existed because an object of the strike was to force the general contractor, who was legally neutral, to terminate the subcontract with the nonunion employer with whom the dispute existed.

The building trades feel that no line can be drawn between neutral and nonneutral employers in such a situation and that the dispute cannot be isolated as it can in other industries. They say the decision is another example of how poorly the Taft-Hartley Act fits the construction industry. They contend it deprives them of what is often their only organizational weapon, threatens the wages and working conditions they have won and forces union men against their will to work alongside nonunion men.

The unions have tried to get Congress to change the rule for a long time. President Eisenhower has given them his support. The House Education and Labor Committee has now proposed such a change.



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- More room in the cab of this snow plow was one of the advantages of installing PUSH-PULL cables. This permitted the hydraulic valve to be located at a more convenient point in the chassis. "There are so many things you can do with these flexible cables compared to the old fixed installations," the manufacturer told us.

- Raising and lowering of the dump body on a famous line of hydraulic dump trucks is via TRU-LAY PUSH-PULL cables. With PUSH-PULLS this merely entails the pulling of a button on the dash. The installation did away with cut-up floor boards and levers in the truck cab. TRU-LAY PUSH-PULLS brought easier installation, more convenience and less maintenance.

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Contracts Permit Owner Delays

Courts will enforce contract clauses that protect owners against liability for delays caused by them.

•It is not uncommon for construction contracts, particularly those involving large projects where many contractors are engaged, to contain a provision to the effect that the various contractors will make no claim for damages resulting from delays caused by the owner or other contractors employed on the job. Such provisions will generally be enforced, even though they may work a hardship on some contractors. That is the contract that they made and the courts cannot change it. Where delays are anticipated, the contractor can protect his interests only by including in his bid a certain amount to cover such a contingency.

In Wells Brothers Co. v. United States, 254 U.S. 83, 65 L. Ed. 148, for example, the contractor brought an action against the government to recover damages resulting from delays caused by the agents of the government.

The contract provided that the contractor would not make any claim against the government for any damages which might arise out of any delay caused by the United States in the performance of the contracts.

The United States Supreme Court held that the provision in question barred the right to recover any damages resulting from delays caused by the government. The court stated: "Men who take million-dollar contracts for government buildings are neither unsophisticated nor careless. Inexperience and inattention are more likely to be found in other parties to such contracts than the contractors, and the presumption is obvious and strong that the men signing such a contract as we have here protected themselves against such delays as are complained of by higher prices exacted for the work."

In another case, the court, referring to a similar provision in a contract, stated: "Where, however, the contract expressly precludes the recovery of damages by the contractor for delay caused by the owner, that provision will be given full effect. Wells Brothers Co. v. United States, 254 U. S. 83, 41 Sup. Ct. 34, 65 L. Ed. 148; Wood v. United States, 258 U.S. 120, 42 Sup. Ct. 209, 66 L. Ed. 495. The language of such preclusive provision is, however, usually given a strict construction because of the harsh results which may flow from the enforement thereof. But when it is clear that a given result comes within the terms of such a provision, the mere fact that the result is a harsh one will not prevent the application of the rule. Whether a given contract provision precludes the recovery of damages in accordance with the rule just announced depends upon the particular language in which it is cast, the nature of the default involved, and the various other circumstances in the case."

In some contracts, a contractor has only one avenue along which to seek relief from delays beyond his control. And that is an extension of time in which to perform his work. But the right to this relief must be specified in the contract and the contractor must follow the procedure prescribed for obtaining an extension.

The general problem was described this way by a New York court[2] that dismissed a contractor's suit for damages resulting from delays caused by the owner: "The contract was prepared to meet such an emergency, and by its terms relieved the city from liability to meet such an emergency, and by its terms relieved the city from liability to the contractor, except for a proper extension of the time specified for completion; and when parties to a contract specifically provide for the consequences of its breach, the remedy thus provided is exclusive."

(1) Erickson v. Edmonds School District, No. 15, 125 P. 2d 275.

(2) Mechanic's Bank v. City of New York, 164 App. Div. 128, 149 N. Y. Supp. 784.

Contingency Fees

Legally uncollectible in government work

One cannot legally contract his services to another and make the contract dependent on the later award of a government contract. Such an agreement to obtain government contracts on a contingency fee basis is considered against public policy, invalid and unenforceable.[1]

Edmund V. Browne made such a contract with two engineers who owned the R. & R. Engineering Co. Mr. Browne was a registered engineer, experienced in preparing bids for government contracts. When he learned that many subcontracts were to be awarded for an Atomic Energy Commission job, he suggested that R. & R. submit bids for the project.

R. & R. was a small firm that had handled few jobs over $1,000. Its owners were not on the government's list of subcontractors and had no experience in bidding on government work.

Mr. Browne agreed to attempt to get R. & R. placed on the bidders' list, to make some essential engineering drawings and to help prepare the bid. In return, he was to receive $1,000 and a partnership or percentage of the contract price, if and when a contract was obtained.

With Mr. Browne's help, R. & R. received $284,000 in contracts. To handle them, R. & R. had to expand facilities and raise more capital. During the period of bid preparation and fund raising, the question of Mr. Browne's compensation was forced into the background. When he brought up the matter, he found that R. & R. was uncooperative.

On April 23, 1956, R. & R. incorporated. Its two former owners doubled their salaries and paid themselves large bonuses at the end of the year. Mr. Browne got none of the profit on the contracts he had obtained.

R. & R. refused to make a contract to pay Mr. Browne for his services, but the company requested him to send a bill for those services. He submitted a bill for $14,500—5% of the gross contract price—which R. & R. refused to pay. Instead, it sent him a check for $5,600, of which $1,000 was the agreed price for preparing drawings.

Mr. Browne accepted the payment under protest and brought suit to recover $14,500.

The court ruled that, though Mr. Browne's services were worth what he asked, the suit must be dismissed. It referred to many cases where the courts condemned such contingency contracts as being against public policy.

(1) Browne v. R. & R. Engineering Co., 164 F. Supp. 315, U. S. District Court of Delaware, July 21, 1958.

These summaries of court decisions are prepared by I. Vernon Werbin, Esq., New York attorney and licensed professional engineer, who is author of the following books published by McGraw-Hill Book Company, Inc.: *Legal Phases of Construction Contracts; Legal Guide for Contractors, Architects and Engineers; and Legal Cases for Contractors, Architects and Engineers.*

OFFICIAL PROPOSALS

RATE: The rate for Official Proposal advertising is $2.40 per line or fraction set solid. Where the advertisement is set other than solid, the space is measured by total space occupied and charged on basis of 12 lines to the inch.

CLOSING DATE: Friday 10:30 A.M. for issue dated the following Thursday.

SEND COPY TO: Official Proposal Division,
Engineering News-Record
Class. Adv. Div.,
P. O. Box 12, N. Y. 36, N. Y.

Bids: August 13, 1959

Test Borings
Contract 469

SEALED BIDS will be received by the Board of Water Supply, at its offices, thirteenth floor, 120 Wall Street, New York City, until 11:00 A.M., Eastern Daylight Saving Time (10:00 A.M., Eastern Standard Time) on Thursday, August 13, 1959, for Contract 469, for making vertical test borings in Upper New York Bay and on land in the Boroughs of Brooklyn and Richmond, City of New York, to determine the elevations, nature, and conditions of the bed rock, and the depths and character of the overlying materials, all as set forth in the specifications.

No bid will be received and deposited unless accompanied by a certified check upon a National or State bank, drawn and made payable to the order of the Comptroller of The City of New York, in the amount of forty thousand dollars ($40,000.00), for the proper execution of the contract.

Pamphlets containing information for bidders, forms of bid and contract, specifications, contract drawing, requirements as to surety, etc., can be obtained in the Secretary's office, Room 1312, at the above address, upon application in person or by mail, by depositing the sum of $5.00 for each pamphlet. Within 30 days following the award of Contract or rejection of bids the full amount of such deposit will be refunded for each pamphlet submitted as a bid and a refund of $4.00 will be made for each other pamphlet returned in acceptable condition. For further particulars apply at the office of the Chief Engineer at the above address.

ARTHUR C. FORD, President, EDWARD C. MAGUIRE, HERBERT M. ROSENBERG, Commissioners; Board of Water Supply; BETTY COHEN, Acting Secretary.

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Its distribution among the contractors of any one state is in proportion to the number of contractors situated in that state. The Official Proposal Columns of *Engineering News-Record* offer precisely the same efficient service to municipalities, counties, state and federal departments in every section of the United States.

Bids: August 11, 1959.

Contract EP-502.213

THE PORT OF NEW YORK AUTHORITY
ELIZABETH-PORT AUTHORITY PIERS
WATER BORINGS

Sealed proposals for making water borings and taking samples in the vicinity of the Elizabeth-Port Authority Piers will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Tuesday, August 11, 1959, at which time said praposals will be opened and read in Room 1108.

Contract Documents may be seen at the office of the Assistant Chief Engineer for Design of the Authority, Room 1115, and copies will be furnished upon request. No deposit will be required but the documents shall be returned in good condition not later than forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
S. Sloan Colt, Charman

Bids: August 18, 1959.

Clearing and Grubbing
Charlotteburg Reservoir
Contract—CRP-7

OFFICE OF THE DIRECTOR OF THE DEPARTMENT OF PUBLIC WORKS OF THE CITY OF NEWARK, NEW JERSEY
City Hall, Newark, N. J.
Date: July 23, 1959

Job No. 4167 Division of Water Supply

Sealed Proposals will be received at 10:00 A. M. Eastern Daylight Saving Time on Tuesday, August 18, 1959, by the Director of the Department of Public Works in Room 309, City Hall, Newark, New Jersey, and then and there at 10:00 A. M. publicly opened and read for the following work which is a part of the Charlotteburg Reservoir Project:

CLEARING AND GRUBBING,
CONTRACT CRP-7

The work to be done under this Contract involves clearing and grubbing and other related work in the Charlotteburg Reservoir area in preparation for the storage of water. The work is located in the Pequannock Watershed in Morris and Passaic Counties, approximately 25 miles northwesterly from the corporate limits of The City of Newark, in the general vicinity of New Jersey State Highway Route No. 23.

The Drawings, Specifications, Instructions and Information for Bidders, the Bid or Proposal, Contract and Bond forms are on file and may be seen at the office of the Division Engineer, Division of Water Supply, Department of Public Works, Room 101, City Hall Annex, Newark, and at the office of Parsons, Brinckerhoff, Hall & Macdonald, Engineers, Hydraulic & Sanitary Department, Room 2432, 165 Broadway, New York, New York. Copies may be obtained at the office of Parsons, Brinckerhoff, Hall & Macdonald upon deposit of twenty-five dollars, which sum will be refunded upon return of the Drawings and Specifications in good condition within 30 days after the opening of Bids or upon submittal of a formal Bid.

An Agreement of Surety signed by a Surety Company authorized to do business in New Jersey shall accompany each Proposal for execution of Contract on award thereof. Said Agreement of Surety shall be in conformity with the requirements specified in Instructions and Information for Bidders.

The Contract will be awarded to the lowest responsible bidder. The City reserves the right to reject any and all Bids or waive informalities therein.

All Proposals are subject to the requirements of all laws and City ordinances affecting same. The Bidder's attention is called to Section 2.58 of the City Administrative Code.

By direction of the Director of the Department of Public Works of The City of Newark.

George W. Andress
Director, Department of Public Works

Bids: August 6, 1959

Board of Education
Bureau of Construction

Notice Re: Prequalification Forms For Contractors

APPROVED AS TO FORM
Acting Corp. Counsel

NOTICE IS HEREBY GIVEN THAT

The Superintendent of School Buildings, Bureau of Construction, 4th Floor, Room 407, 42-15 Crescent Street, Long Island City 1, New York will receive application for prequalification from contractors who may wish to submit bids for the proposed hereinafter specified contracts as follows: general construction, plumbing and drainage, heating and ventilating, electrical work and lighting fixtures.

Public School 23, The Bronx—New Addition & Modernization, East 165th Street, between Union and Tinton Avenues.

Prequalifications application forms will have to be secured from and must be submitted to the Superintendent of School Buildings, Bureau of Construction, 4th Floor, Room 407, 42-15 Crescent Street, Long Island City 1, New York.

Bids when advertised, will be received from prequalified bidders only.

Time for submitting prequalification application by contractors will expire on Thursday, August 6th, 1959.

WILLIAM H. CORREALE
Superintendent of School Buildings,
Design and Construction.
Starting: Monday, July 27, 1959
Five (5) Days.

Dated: July 22, 1959

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Invitation No. DS-5224) will be received at Denver, Colorado, until 2 p.m., Mountain Standard Time, September 10, 1959, for furnishing horizontal-shaft, single-jet, single-runner, impulse-type hydraulic turbines as follows: One (1) 12,000 horsepower, 600 rpm turbine and one (1) 6,800 horsepower, 450 rpm turbine; governors and shut-off valves for above turbines for Upper and Lower Molina Powerplants, Collbran Project, Colorado. Delivery is desired within 400 days. For particulars, address Bureau of Reclamation, Building 53, Denver Federal Center, Denver 25, Colorado. Floyd

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DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Invitation No. DS-5225) will be received at Denver, Colorado, until 2 p.m., Mountain Standard Time, September 10, 1959, for furnishing one 9,600-kva, 4-160-volt, 600-rpm, horizontal-shaft, indoor, open-type hydraulic-driven AC generator for Upper Molina and one 5,400-kva, 4,160-volt, 450-rpm, horizontal-shaft, indoor, open-type, hydraulic-driven AC generator for Lower Molina Powerplants, Collbran Project, Colorado. Delivery is desired within 400 days. For particulars, address Bureau of Reclamation, Building 53, Denver Federal Center, Denver 25, Colorado. Floyd E. Dominy, Commissioner.

Bids: August 6, 1959.

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Highway Law, Public Buildings Law, Canal Law and Article 2, Title 9 of the Public Authorities Law, and special provisions for projects financed with Federal Aid Funds, sealed proposals will be received until ten-thirty o'clock A. M., advanced standard time, which is nine-thirty o'clock A. M., eastern standard time, on the 6th day of August 1959, by Henry A. Cohen, Director, Bureau of Contracts, 12th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
DISTRICT No. 1, G. L. Nickerson, District Engineer, 353 Broadway, Albany 1, New York						
Rensselaer (Rte. 151)	FARC 59-43	Barracks Road, S.H. 102 Proj. S-497(1)	1.92	Asphalt Conc. Pavt. = 1.91 Mi.; Misc. Work = 0.01 Mi. R.C. Arch Br. 24′ Sp.	$30,000 Plans $5	$552,000
Rennsselaer & Saratoga (Rte. 67)	FARC 59-110	Stillwater-Schaghticoke, S.H. 1791 Proj. F-631(4)	0.42	Asph. Conc. Pavt., Raise & Rehabilitate Exist. 6 Sp. Truss Bridge, Steel Truss Br. 1 Sp. 180′	$15,000 Plans $5	264,000
Saratoga (Int. Rte. 87)	C.R. 59-3	Interstate Route 502-2-2 Sect. 3 Clifton Park-Malta	....	Removal of Human Remains	$150 No Plans Proposal $2	2,600
DISTRICT No. 3, Earle E. Towlson, Acting District Engineer, 333 E. Washington Street, Syracuse, New York						
Onondaga (Rte. 80)	R.C. 59-131	Vesper-Tully, S.H. 1070; Skaneateles-Hamilton Pt. 1, S.H. 330; Vesper-So. Onondaga Pt. 1, S.H. 557; Syracuse-Otisco Pt. 2, S.H. 1619	12.16	Asphalt Conc. Ty. 1A Pavt.	$40,000 Plans $5	737,000
Oswego (Int. Tour. Rte. 81)	FISH 59-1 FARC 59-1	Interstate Route 505 (Parish-Jefferson County Line, Pt. 1) Mapleview-Checkered House, S.H. 9284 Proj. I-81-2(18)110 and S-522(1)	9.48 (5.00 Acc.)	9″ Cem. Conc. Pavt. 2 @ 24′ Var. Wide = 8.73 Mi.; 9″ Cem. Conc. Pavt. (Ramps) = 2.22 Mi.; Asph Conc. Pavt. = 2.02 Mi.; Top Crse. Graded Gravel = 1.51 Mi.; 8 Hy. Seps. Comp. W-F Beams 230.2′, 135.4′, 139.1′, 312.1′, 121′, 119.4′, 121.8′ and 121.8′; 2 R.C. Twin Box Brs. 31′ and 31′	$400,000 Plans $10	7,410,000
Wayne	R.C. 59-102	25 Various State Highways on Rtes. 14, 21, 31, 88, 89, 104, 104A, 350 and 414	....	Roadside Development	$350 No Plans Proposal $2	6,000
DISTRICT No. 4, B. F. Perry, District Engineer, Barge Canal Terminal, Rochester 1, New York						
Monroe	R.C.C. 59-117	City of Rochester: Inner Loop (Genesee River Bridge and Approaches) FACG 53-11	0.27	Sealing, Repairing and Painting Existing 15 Span Steel Stringer Bridge	$5,700 Plans $5	98,000
DISTRICT No. 5, E. G. H. Youngmann, District Engineer, State Office Bldg., 65 Court Street, Buffalo 2, New York						
Cattaraugus	FAC 59-12	City of Olean: East-West Arterial Highway (East State Street: Union St. to Barry St.). Proj. U-141(6)	0.14	Asphalt Concrete, Type 2A = 0.09 Mi. Misc. Work = 0.05 Mi.	$3,500 Plans $5	66,000
Erie (Int. Tour. Rte. 190)	FINTC 59-3	Interstate Route 506, N. Y. State Thruway, Niagara Section, Subd. N4 and N5 (City of Buffalo: Franklin St. to Porter Ave.). Proj. I-190:1(18)74	1.64 (0.60 Acc.)	Electrical Lighting Facilities	$5,500 Plans $5	99,000
Erie (Int. Tour. Rte. 190)	FINTC 59-4 NTC 59-5	Interstate Route 506, N. Y. State Thruway, Niagara Section, Subd. N1, N2, N3 and N7 Proj. I-190-1(19)72		Furnishing and Installing 28,700 L.F. Chain Link Fence	$5,000 Plans $5	90,000
Niagara (Rte. 18)	FARC 59-105	Youngstown-Olcott Pt. 2, S.H. 8324 Proj. F-461(7)	2.09	Asphalt Concrete Pavement	$9,000 Plans $5	171,000
DISTRICT No. 6, James H. Thomas, District Engineer, State Office Bldg., 30 West Main Street, Hornell, New York						
Allegany (Rte. 19)	T.C. 59-3	Belmont-Scio, S.H. 5476; Caneadea-Fillmore-Hume, S.H. 5518; Fillmore-Portageville, S.H. 9210	0.03	Furnishing and Installing Traffic Signal	$700 Plans $5	13,000
Schuyler (Rte. 414)	FARC 59-113	Post Creek-Watkins Glen Pts. 3 and 4, S.H. 8402 Proj. F-591(4)	6.50	Asphalt Concrete Pavt.	$40,000 Plans $5	712,000
DISTRICT No. 7; Robert W. Sweet, District Engineer, 444 Van Duzee Street, Watertown, N. Y.						
Franklin (Rte. 374)	FARC 59-109	Chateaugay-Canadian Line, S.H. 8040 Proj. S-81(2)	4.65	Bit. Double Surf. Treat. Pavt. = 4.54 Mi.; Asph. Conc. Ty. 1A Pavt = 0.11 Mi.; Widen Exist. Conc. Arch BR. 30′ Span	$38,000 Plans $5	687,000
Franklin & St Lawrence (Rte. 37)	FARC 59-100	Masena-Helena Pt. 1, S.H. 1261; Raquett River-Hogansburg Pt. 1, S.H. 1861 and Raquett River-Hogansburg, Pt. 2, St. Regis Indian Reservation-Fort Covington Pt 1, S.H. 8396 Proj. F-580(15)	5.07	Asphalt Conc Ty. 1A Pavt. = 5.03 Mi; Misc. Work = 0.04 Mi.; 2 Hy. Seps. Comp. WF Beams; 3 Sp. 166.5′ and 3 Sp. 167.5′; 1 RR Sep. Comp. I-Beam Twin 2 Sp 160′ Ea., 1 Br. Deck Girder Cant. Type Twin 5 Sp. 710′ Ea.	$290,000 Plans $5	5,245,000
Jefferson (Int. Tour. Rte. 81)	FISH 59-16	Interstate Route 505 Section 7 AB-2 (Pierrepont Manor to Adams) and S.H. 184; C.R. 107, C.R. 126, C.R. 112 & C.R. 110 Proj. I-81-3(13)135	5.57 (2.29 Acc.)	Asph. Conc. Type 1A Pavt. = 5.55 Mi. (M.L.) 2.29 Mi. (Acc.) Miscell. Work = 0.02 Mi.; 4 Hy. Seps Twin Comp. I-Beams 3 Sp. 119′; 3 Sp. 144.3′ and 146.8′; 3 Sp. 129.5′, 3 Sp. 138.5′ and 140′. 1 Hy. Sep. R.C. Rigid Frame Twin 1 Sp. 41.8′, 1 Br R.C. Twin Box 42′ Sp., 2 Twin Comp. I-Beam Brs., 3 Sp. 291′ and 3 Sp. 262′	$320,000 Plans $10	$5,774,000
DISTRICT No. 8, Kurt G. Rauer, District Engineer, Pleasant Valley Road, Poughkeepsie, New York						
Rockland (Rte. 9W)	R.C. 59-116	New Jersey State Line-Nyack Pt. 2, S.H. 5714		Cleaning and Painting 1 Bridge	$900 Plans $5	16,000
Ulster	FASS 59-20	Hoagerburgh Hill Road Co. Rd. No. 70 (Bruynswick Bridge Co Br No 150); Proj S-527	1.35	Asph. Conc. Pavement Comp. I-Beam Br. 2 Sp. 186′	$17,000 Plans $5	313,000
DISTRICT No 9, Joseph C Federick, District Engineer, 71 Frederick Street, Binghamton, New York						
Broome (Rte. 17)	FARC 59-115	Windsor-Deposit, S.H. 5338; Binghamton-Windsor Pt. 4, S.H. 5241; Binghamton-Windsor Pt. 3, S.H. 5148; Windsor Village: Main Street S.H. 1239 Proj. F-FG-344 (25)	6.31 (4.77 Acc.)	9″ Cem Conc. Pavt. 2 @ 24′ Var. Wide = 6.16 Mi (Access = 1.17 Mi. Cem Conc. Pavt., 0.61 Mi. Asp. Conc. Pavt., 2.04 Mi. Bit. Surf. Treat. & 0.95 Mi. Gran. Mat.) Bit. Surf. Treatment = 0.15 Mi. 8 Hy. Seps. Comp. Beams 131.4′, 137.8′, 123.6′, 128.8′, 192′, 192′, 139.5′ and 147.8′; 2 RR Seps. Comp. Beams 224.7′ and 249.7′; 7 Brs. Comp. Beams 139′, 167′, 105′, 545′, 545′, 423.8′ and 514′; 1 Br. Reinf. Conc. Box 23.4′	$550,000 Plans $10	$10,064,000
Chenango	FC 59-1	Newton Creek: Bainbridge Flood Control Project	0.49	Furnishing & Erecting 5′ Chain Link Fence	$1,100 Plans $10	20,000
Sullivan (Rtes. 209, 42, 52 & 55)	R.C. 59-103	S.H. 8287; S.H. 1478; S.H. 1708; S.H. 8153; S.H. 8171; S.H. 8335; S.H. 1601; S.H. 1837; S.H. 50-10 and S.H. 700		Roadside Development	$700 Plans $5	13,000
DISTRICT No. 10, M. E. Gould, District Engineer, 325 W. Main Street, Babylon, L. I., New York						
Suffolk	O.P. 59-1	Ocean Parkway (Gilgo St. Park to Captree St. Parkway)	7.14	Landscaping and Miscell. Work	$22,000 Plans $5	398,000
Suffolk	FASH 59-13	Sunrise Highway Extension (S.H. 1883 to Springdale Road) Proj. F-559(12)	3.98 (5.39 Acc.)	9″ Cem. Conc. Pavt. (Carb. Black) 2@ 24′ Var. Wide = 3.28 Mi.; Miscell. Work = 0.70 Mi. (Access = 0.91 Mi. Cem. Conc. & 4.48 Mi. Asp. Conc.); 4 Hy. Seps. Comp. W-F Beams 3 Sp. 166′, 3 Sp. 160.5′, 3 Sp. 116.6′, and 4 Sp. 239.3′, 1 Hy. Sep. Plate Girder, 3 Sp. 199.7′	$220,000 Plans $5	4,016,000
Suffolk (Rte. 110)	FARC 59-10	Amityville Village: Broadway, S. H. 1633 Huntington-Amityville Pt. 2, S.H. 1219 Proj. U-297(5)	2.16	Asphalt Concrete Pavement = 2.10 Mi. Miscell. Work = 0.06 Mi.	$79,000 Plans $5	1,444,000
	Total	24 Contracts (23 Hy. and 1 Canal)	89.42			$38,210,600

Any projects in this letting that are on the Federal Aid highway systems are subject to the provisions of the "Federal-Aid Highway Act of 1956", being Public Law 627, 84th Congress, approved June 29, 1956, and are also subject to the applicable New York State statutes.

In compliance with the provisions of Section 115 (Prevailing Rate of Wage), Public Law 627, the minimum wages to be paid laborers and mechanics are included in wage schedules that are set out in the bid proposal.

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "Information for Bidders" in the Public Works Specifications, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as Amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bond shall conform to the provisions of the Highway Laws, as set forth in "Information for Bidders".

The right is reserved to reject any or all bids.

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• POSITIONS VACANT

Experienced Estimator wanted by West Coast firm engaged in General Construction of Commercial and Industrial work. Permanent position. Salary open to right man. Registered Engineer preferred. Send complete resume stating expected salary. P-1889, Engineering New-Record.

Construction Manager—Growing General Construction firm located Northeast U. S. offers unusual opportunity to General Manager of experience and maturity. Applicant must have substantial background, both managerial and field in all types of building construction with proven background and labor relations, job coordinator, construction cost and profit making. Preferred age between 40 and 45 yrs. Firm is fully staffed. Present annual volume $12,000,000 to $15,000,000 and growing. Salary will be substantial with probable bonus. Participation in group life insurance, hospitalization and approved profit sharing plan. Apply only if fully qualified and deserving of high salaried position. Reply with full resume and expected salary to P-2118, Engineering News-Record.

Construction Superintendent — Immediate opening for man of large experience as construction superintendent and administrator for erection of medical science building costing approximately $2,500,000. This is first phase of large college building program. Salary open. Company offers additional employee benefits of group life insurance, hospitalization and profit sharing plan. Reply with full particulars as to background, experience and expected salary to P-2122, Engineering News-Record.

Civil Engineer—Registered or able to obtain registration in Ohio. With three years of experience in structures, highway and sewer work. Starting salary up to $8200, plus benefits, depending upon experience. Apply: City Engineer, 500 Municipal Bldg., Dayton 2, Ohio.

Mechanical Design Engineer: Pulp and Paper Mill machinery and equipment design. Equipment and material selection, specifications and layout. Minimum 8 years' design experience, preferably in the pulp and paper industry. Engineering degree required. Scenic Middle-Atlantic States location. Excellent opportunity. Salary commensurate with ability. P-1810, Engineering News-Record.

Structural Engineer with pleasing personality plus structural design or construction experience for promotional and client contact in eastern United States. Prior client contact experience not required though desirable. Salary open. Send detailed resume to Buchart Engineering Corp., York, Penna.

Wanted: Heavy Construction Project Manager. Minimum of 15 years experience in the U.S.A. Permanent Position. Salary open for the right man. Company doing business through the U.S.A. P-2135, Engineering News-Record.

Civil Engineer with experience in sanitary design work. Needed immediately. Established consultant in Ohio. Give resume and salary requirements. P-2092, Engineering News-Record.

Asst. Prof.—To teach undergrad. courses in transportation, surveying, and fluid mechanics. Salary open. Civil Eng., University of No. Dak., Grand Forks.

(Continued on the following page)

CONSTRUCTION ESTIMATORS

East coast engineering and construction firm has positions available for experienced Estimators in mechanical and electrical work. Prefer background of refining and chemical plant experience. Openings are for Home Office and field assignments in various U.S. locations. Send full resume and availability to:

P-2120, Engineering News-Record
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

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Require man experienced in designing conduit plans, cable systems, physical layouts, wiring diagrams, lighting systems, and other electrical features of hydroelectric powerplant design. Board work. Send resume to Mr. James E. Collins, Personnel Manager.

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A leading Manufacturer in Upstate New York seeks a qualified Mechanical or Electrical Engineer with 1-5 years experience, to work on varied projects. The company provides top fringe benefits. Excellent opportunity to grow and obtain broad experience with progressive organization. Salary open. Send confidential resume to

P-2211, Engineering News-Record
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

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Chemical, Mechanical, or Civil Engineer familiar with petroleum industries' processing equipment. Experience with refractory problems preferred. After training, would serve as technical consultant on refractories. Advancement opportunities in expanding Mid-West Company. Salary open. Send resume to

Box **P-2217,** Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill

EMPLOYMENT OPPORTUNITIES

• POSITIONS VACANT

(Continued from preceding page)

Construction Superintendent experienced in all phases of large building projects. Submit detailed resume of experience and salary desired. Reply P. O. Box 307, Port Chester, New York.

Superintendent of construction for new institutional building on Long Island. Not over 45 years of age. Must be a producer and cost conscious. All trades including mechanical. Reply to P-2144, Engineering News-Record.

Wanted: Construction superintendent experienced in bridge work and sewage treatment plant construction. Salary based on experience and ability. New England area. P-2172, Engineering News-Record.

Openings for Engineer-Job supt. and for estimator, central Illinois contractor (industrial-commercial). Profit sharing, bright future. Give education, experience, salary in reply. J. L. Wroan and Sons, Inc., Normal, Illinois.

Associate and Assistant Professors for fields of advanced dynamics, advanced strength, and elasticity. Also have opening for graduate student as half-time instructor. Engineering Mechanics Dept., Kansas University, Lawrence, Kansas.

Experienced Architectural Draftsmen. Excellent opportunity with established consulting firm in Middle West. State education, experience and required salary. Reply to P-1545, Engineering News-Record.

Assistant Professor: Civil Engineering Department of College of Engineering, University of Nevada requires an additional staff member qualified as Assistant Professor. Address inquiries directly to Dean of Engineering, University of Nevada, Reno, Nevada.

Growing General Contractor needs recent Engineer Graduates in Management Training program. Excellent opportunity for aggressive, ambitious men to work in south and southwest area. P. G. Bell & Co., Inc., P. O. Box 13196, Houston 19, Texas.

Asst. Civil Engr. for earth dam and large water pipeline project in western Ohio. Salary, $500 per month. Submit resume and references. P-2233, Engineering News-Record.

Mechanical Design Engineer—Design and supervise construction of Heating, Ventilation and Air Conditioning Systems for Public and Industrial Buildings. 25 to 45 years of age. Midwest location. Town of 150,000. Hospital and Life Insurance paid for. Profit Sharing. P-2191, Engineering News-Record.

2 Estimators-experienced in figuring earth work—drainage, paving, bridges—for municipal work—location Long Island. Send resume P-2206, Engineering News-Record.

Civil Engineer and/or Land Surveyor. Must be registered or qualified for registration in State of Iowa. Applicant must have experience in boundary survey work and be familiar with sub-division layout and development. Salary open. Reply in detail as to education and experience. P-2212, Engineering News-Record.

• POSITIONS WANTED

Civil Engineer, 26, married, very interested in earth and rock excavating equipment desires challenging job with contractor, equipment dealer or manufacturer. Since graduation in 1955, worked 6 months as equipment operator, 3 years in construction branch of Fed. Gov. on highway, tunnel, and channel improvement jobs and 6 months with Fed. Gov. making time studies of equipment performance. Will relocate—available on 3 weeks notice—resume on request. PW-2055, Engineering News-Record.

Heavy Equipment Supervisor, age 35, 17 yrs exp. dams, power plant, roads, preventive maint. Resume upon request. John C. Melton, Birdsong Road, Camden, Tennessee, Pho. LU 4-7901.

Mechanical engineer or designer; over twenty years diversified field and office experience, including supervision. Process, power, and other. Prefer field assignment, but office acceptable. Bob Mills, 219 N. Jefferson, Kittanning, Penna.

Heavy Construction Superintendent 18 years experience dock construction, pile driving, bridges and dams desires position with responsibility and future. PW-2137, Engineering News-Record.

Civil Engineer, MCE, 35, Registered, with wide experience in supervision of major hiway, airport and earthfill dam projects seeks position with engineer or contractor, domestic or foreign. Fluent Spanish. PW-2104, Engineering News-Record.

• POSITIONS WANTED

Field Superintendent for construction of sewers, water, grading and concrete jobs. Age 47, no college degree, 24 years practical experience, ability to complete jobs from start to finish. Salary open. PW-2150, Engineering News-Record.

Foreman or general foreman—20 years experience in sewer and water lines, also asphalt or concrete paving. Reliable and good producer. Available immediately. PW-2146, Engineering News-Record.

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Construction Superintendent—24 years heavy construction, excavation, tunnels, hydraulic structures, hydro and diesel electric power plants, dams, pumping plants, sewage, chemical, mechanical, crushing plants, conveyors, ore dressing, buildings, structural steel, estimate, project planning, cost control and administration. Extensive Latin American experience, tri-lingual—Highest references. Available Aug. 1st. PW-2184, Engineering News-Record.

Construction Manager, General Superintendent 25 years responsible charge multi-story office buildings, varied housing projects, commercial industrial projects, skilled negotiating subcontractors and others maintain completion schedules etc. $15,000-plus. PW-2193, Engineering News-Record.

Construction Engineer, 32, Graduate, Qualified Estimator and Field Eng., Desires more responsibility with small to medium progressive contractor as Ass't or chief estimator, project manager. South or S. W. PW-2185, Engineering News-Record.

Soils-Foundation Engineer; MSCE; 29; 6 years experience, office and field involving earth dams, waterfront structures, underpinning, cofferdams, airfields, highways and embankments. Desire responsible position in metropolitan or adjoining area. PW-2182, Engineering News-Record.

• POSITIONS WANTED

Chief Engineer-Estimator—15 yrs. hvy. const. exp., estimating to job completion highways, bridges, sewage plants, sewers, waterworks, tunnels, railroads, dock work, poles, & earth moving in .5-5 million range. Want supr. position where terrific drive, hard work & executive ability will be mutually rewarding. Grad. Eng., P.E., N.Y.-40-N.Y., L.I., N.J., Conn. area. PW-2232, Engineering News-Record.

"Construction Manager or Engineer" — B.S.C.E. 10 years supervising industrial, heavy and building const. including elec. and mech. work. Desire associate small to medium size const. or engineering co. Interested in future ownership participation thru investment. PW-2230, Engineering News-Record.

Civil Engineer Honours Degree Dublin University; Member Institution Civil Engineers; age 46; retired Director Public Works Crown Colony; currently on vacation here would like settle particularly South; propositions welcomed: Write Sagar, P.O. Box 2370, Jacksonville, Florida.

BSCE—29—7 years field experience especially familiar with Air Force Hangar Constr: presently employed as field Project Manager. Desire work with General Contractor in field or office. PW-2213, Engineering News-Record.

Civil Engineer, age 40, registered in Ark. 15 years experience in highway and bridge design & const. 10 years experience in refinery const. presently in charge of 2½ million dollar interchange on Interstate highway const. desires overseas assignment. P.O. Box 67, West Memphis, Ark.

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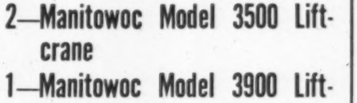

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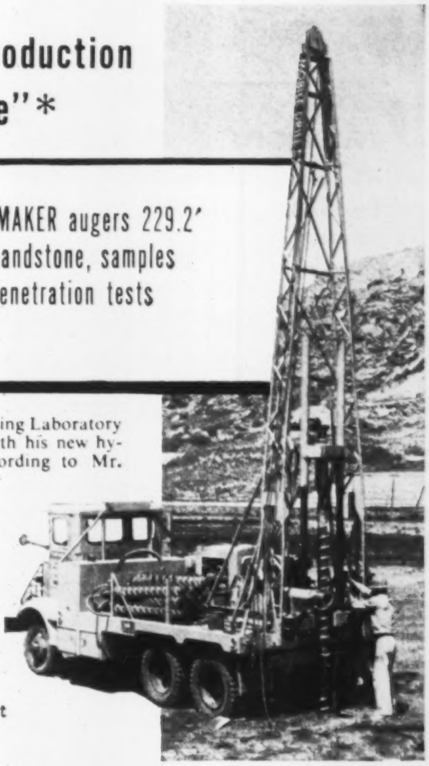

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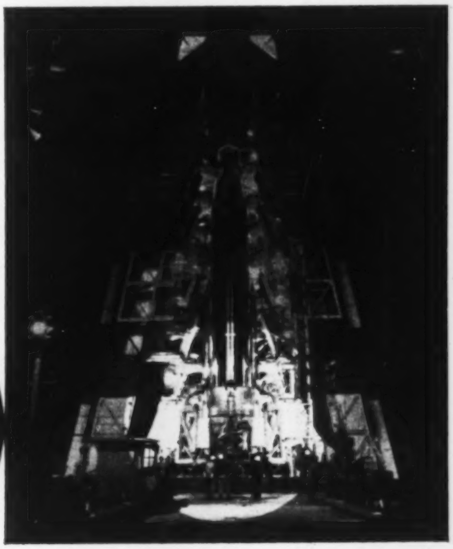

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Editorials

Missions Better Than Missiles

The Soviet method of mixing friendship and fright was prominently displayed on the world stage last week, with Premier Khrushchev welcoming Vice-President Nixon to Moscow for the opening of the U.S. exhibit there, while at the same time his diplomatic lieutenants in Geneva continued to support his demand that we get out of Berlin or else. Such behavior, however, should not be permitted to hide the fact that, on the technological front at least, there is marked improvement in Soviet-U.S. relations.

The beginning of this improvement dates from about January, a year ago, when an agreement was signed providing for technological, cultural and educational exchanges between the two countries. Since then, Russian missions of dam engineers and of foundation and soil mechanics experts have visited the U.S., and plans are in the making for U.S. engineers with similar interests to visit the Soviet Union.

The Soviet exhibit in New York, and now the U.S. exhibit in Moscow, will also contribute significantly to this exchange of knowledge and understanding. And only last week arrangements were completed between our National Academy of Sciences and the Academy of Sciences of the U.S.S.R., whereby exchange periods may last up to a year instead of for only a few weeks.

It may well be that the Soviets hope to gain more than they give in the field of technical knowledge. Nevertheless the situation is not without its advantages to us. For one thing, of course, it is to be expected that we will learn something new and useful. Russian engineers have always been capable, although a good many people in the western world seemed unaware of the fact prior to the launching of the first Sputnik.

There will be an advantage, too, in working together, as we do with all other countries, on the common objective of improving design and construction techniques, without being obsessed with their military implications. When, in the past, Germany and Belgium were setting the pace in structural welding, France in concrete construction and Holland in dredging and dike building, no one would have thought of these advances as posing a threat to the United States. On the contrary, they were greeted everywhere with praise. Only when the Soviets appeared on the scene, with their drive to catch up with the rest of the world for military advantage, were advances in non-militaristic fields of technology kept secret or used to arouse fears. If the Soviets now return to the normal attitudes that have always prevailed in international technology, everyone will benefit.

It is, in fact, a normal attitude toward all the affairs of the world that is so badly needed from the Soviets to assure peace. These exchanges of technical missions are a step toward this normalcy. The next step—cessation of the sword rattling that Mr. Khrushchev indulges in so frequently—may be made easier because of the improved relationships that the exchanges may provide. In the meantime, an exchange of missions is far better than an exchange of missiles. And so long as we are visiting back and forth, the button is less likely to be pushed.

Criticism Criticized

Six months ago on this page (ENR Jan. 15, p. 124) interest was expressed in a proposal to encourage more critical appraisals in the press of architectural—and perhaps engineering—designs, in a vein similar to that followed for plays, movies and books. The idea was that more such criticisms might sharpen the public's thinking and heighten its understanding of architecture and engineering. Doubt was expressed, however, that enough capable critics could be found to do the job.

One doubt that was not expressed, but should have been, relates to the character of such architectural criticism as is published from time to time: It abounds in uncommon words, esoteric phrases and liltingly sonorous sentences of uncertain meaning; and it is the artistic rather than the architectural or engineering quality of the structure that is criticized.

This shortcoming, it is gratifying to record, also bothers Tom Creighton, the editor of Progressive Architecture and a knowledgeable architect himself. In last month's issue of his magazine he fires a broadside at the kind of criticism that has been directed at the new Seagram Building in New York. Noting that the critics treat it as if it were a piece of sculpture with no functional purpose worth discussing, he asks: What about its success or failure as a commercial building? Is it properly designed for its surroundings? Is its interior space utilized efficiently? Can it be operated economically, and does it satisfy its occupants?

In short, says Mr. Creighton, "Why not widen the base of criticism?" The only answer is that the critiques must be widened if they are to be meaningful and not just literary exercises. It might be added that a further improvement would be to use enough simple language to make them understandable.

Nuclear Age Coming Fast

More contracts for nuclear plant construction were awarded in the first six months of this year than for any full year since 1952, when the government was expanding its atomic and H-bomb facilities. A large proportion of this year's $263 million worth of contracts is for atomic power plants. Significantly, nearly $100 million of the total is private work, and there is a current backlog of $250 million more. Clearly, nuclear construction as a significant factor in total construction is coming up fast.

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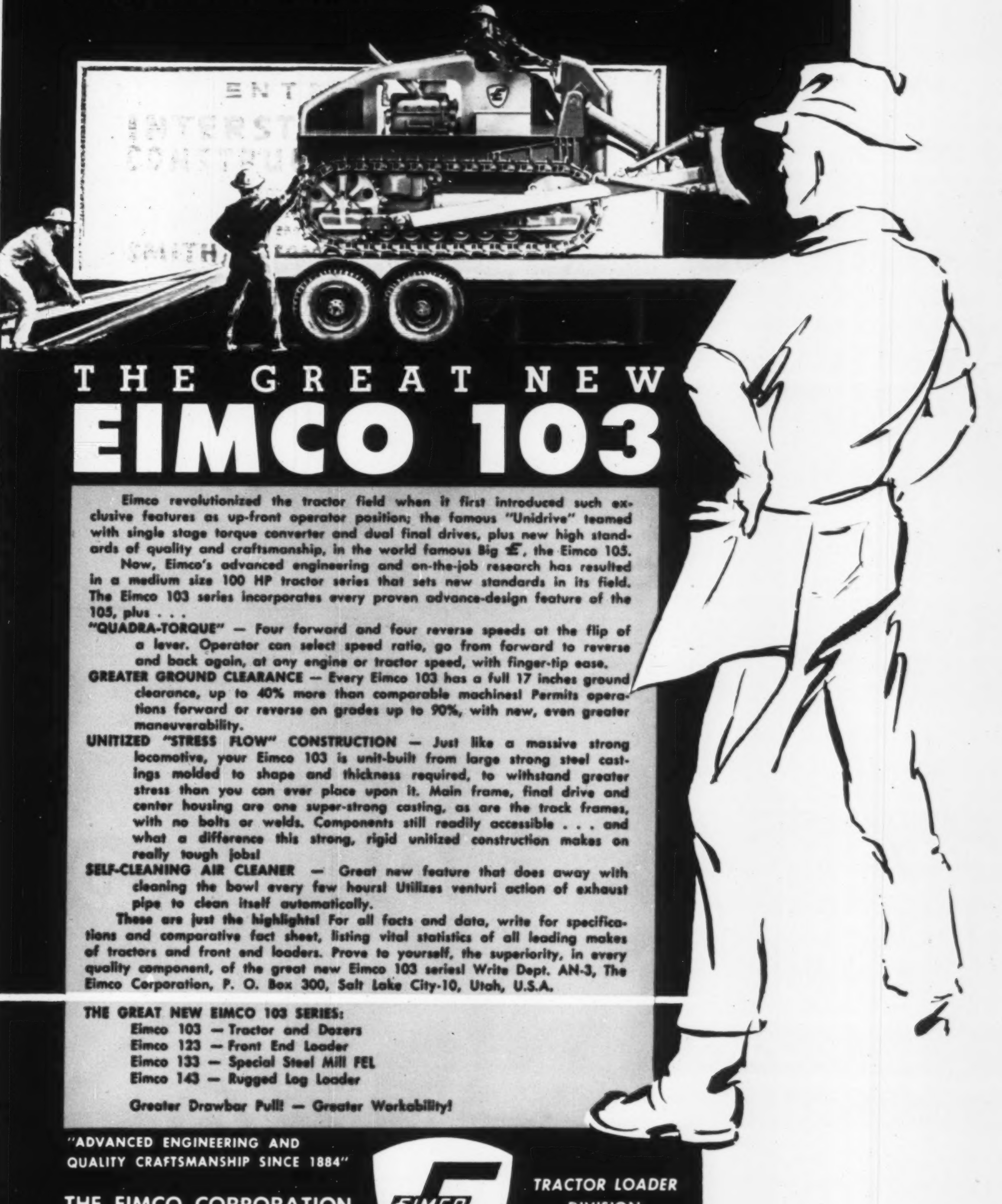

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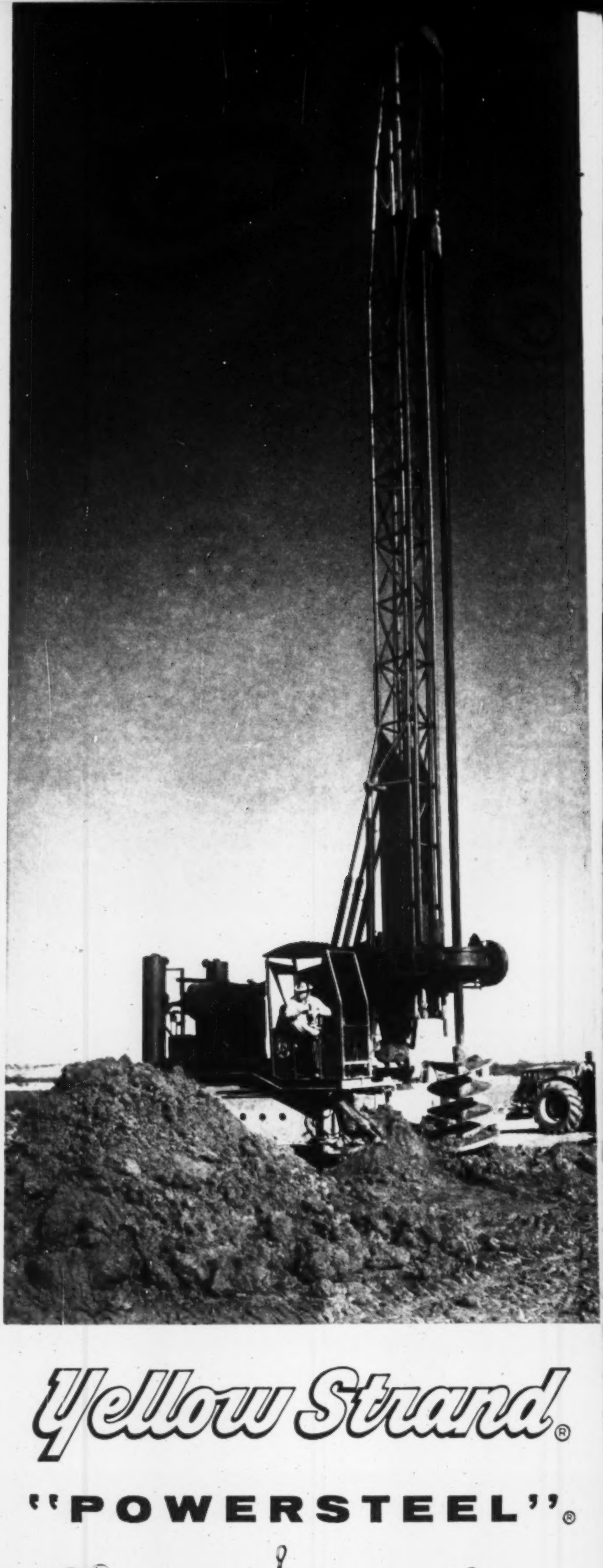

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